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ABSTRACT

A collection of 12 essays provides an overview of population education in Asia and Oceania with regard to concepts, status, approaches in curriculum and materials development, methodologies, and research and evaluation. The collection is presented in five sections. Section I explores general definitions of population education; its role as part of national or independent programs; relationships between population growth, national development, resource utilization, and environment; and population education as a means to promote family planning. Section II outlines interdisciplinary approaches in several countries and gives examples of population education content of school subjects including home economics, science, and social studies. Section III reviews various approaches to teaching population education (i.e., discovery, expository teaching); presents sample units; and identifies relevant ethical issues in areas including distributive justice, politics, and economic development. Section IV suggests various research and evaluation designs. Section V discusses out-of-school population education in terms of program development and materials production. (AV)

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Population Education Programme Service

POPULATION EDUCATION

A SOURCE BOOK ON CONTENT AND METHODOLOGY

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PREFACE

This book is a collection of papers prepared by the Population Education Mobile Team of the Unesco Regional Office for Education in Asia and Oceania during the period 1976 to 1979. All of the papers were primarily written for presentation at various training programmes, workshops, conferences, seminars and meetings held in the Member States or at the Regional Office. The 'Source Book' represents the thinking and experiences of the Regional Mobile Team on various aspects of population education. In the course of time these papers have been revised to meet the changing needs and requirements of population education in the region. Likewise, the reactions and feedbacks from the initial target audience for each paper have been utilized in the technical revision of papers prior to the printing of this first compiled version. Further editing is to be undertaken before publishing them on a wider scale.

The Regional Mobile Team have been receiving reassurances from population educators that these staff papers are very useful in providing an orientation of the nature, concepts and status of population education both in and out of school; serving as springboards for discussions of basic issues in population education; and most importantly, showing various approaches and methodologies used by various countries in implementing their population education programmes.

The usefulness of these papers extends beyond the four corners of the meeting room. Because of the numerous requests that Unesco is receiving every day, we are reprinting these papers together in order to: (1) provide a holistic picture of population education in the region of Asia and Oceania with regard to concepts, status, approaches in curriculum and materials development, methodologies, and research and evaluation; (2) provide information on specific experiences in the region with regard to planning and implementing all aspects of a population education programme; and (3) serve as a 'how-to' reference book, where practical guidelines can be used as the basis for planning, implementing and improving population education programmes in countries of the region.

CONCEPTS, NATURE AND STATUS OF POPULATION EDUCATION

Population Education - Nature and Status*

D. 15

Introduction

The population of Asia in mid-1977 was estimated to be 2.3 billion with an average annual rate of natural increase of about 2.0 per cent. 1/ At this rate of increase the population of these countries will double in the next about 36 years. The size of population at present is a matter of great concern but of greater concern is the rate of population growth which is seriously affecting the

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* An integrated paper based on the paper presented at the National Seminar on Curriculum and Textbooks, Kathmandu, Nepal, 10-29 March 1978 and a paper prepared for the National Training in Population Education in Kabul, Afghanistan, 1-6 September 1979.

1/ 1977 World Population Data Sheet. Washington, D.C. Population Reference Bureau, Inc.

developmental efforts. The higher the rate of increase of population, the greater are the efforts needed to maintain and raise the standard of living of the people.

Another important factor to be considered is that about 45 per cent of the population in these countries is below the age of 15. This young generation will constitute a major portion of the adult population in the next few years. Their reproductive behavior as well as their participation in the overall development activities of the countries will be of great significance in improving the quality of life.

Because of an awareness of the interrelationship between population and development most of the countries in the Asian region started family planning programmes during the 1950s and 1960s. These programmes have not shown equally good results in all countries because of the factors of lack of education, problems of communication, and economic and socio-cultural conditions. Probably, a combination of various approaches to population change is needed to make headway. Of these, education of the parents as well as future parents is the most potent. Education is one element that can be used to help develop new behaviours. As a result of the recognition of education as an important instrument for bringing about change in attitude and behaviour, many countries in the Asian region are attempting to use education as an agent to foster open-minded attitudes. Population education programmes in many countries in Asia are the response of national education systems to the public concern about population issues.

NATURE OF POPULATION EDUCATION

Since the concept of population education was formulated in response to the population problem and to supplement family planning programmes, it is sometimes misunderstood both within and outside the education system as another name for sex education or family planning. Even some definitions of population education include sex education, birth control and family planning education.

Definitions also differ in the specific behavioural outcomes such as acceptance of a small family size norm while others adopt a non-directive approach. The psychological implications for younger children who come from large families may be frustrating. These children may feel rejected as a result of the pursuit of such an objective which insists that "a small family is a happy family." Moreover, such an assertion is not universally true for there are many instances of bigger families being happy families.

The different perceptions of population education have led to a number of issues which have generated much debate and discussion. These issues centre around such views as the following:

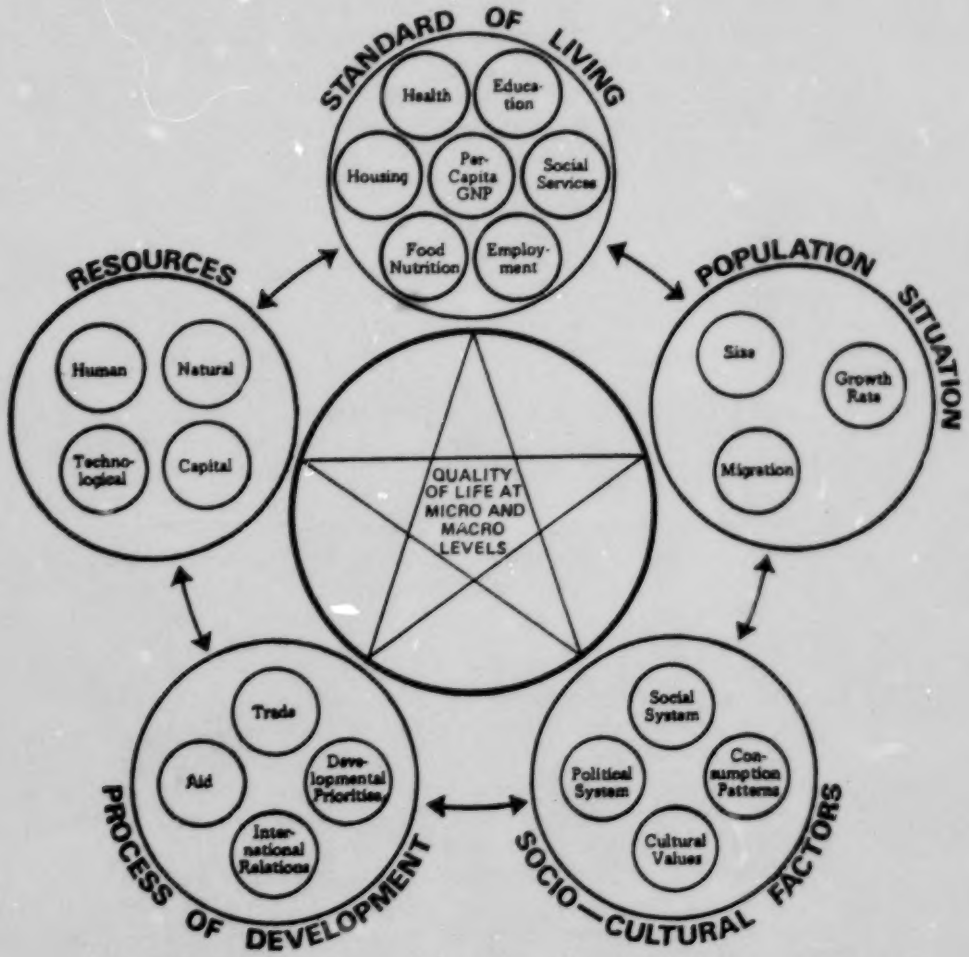
a) Population is only one cause of poverty, and reduction of the population growth rate is no guarantee of social and economic progress. Population problem should be considered as an integral part of the total development process and not in isolation.

b) Population education should, therefore, stress the interrelationship between population dynamics and economic and social development, deal with both determinants and consequences of population and be viewed as a part of total social and economic planning.

c) Population is not only a problem of poor non-industrialized countries. The consumption-based life style of the people in the industrialized countries have equally contributed to the problems of resource depletion, environmental deterioration and poverty. The population education programme should, therefore, be presented in a global framework but with a regional, national and local relevance.

d) While the improvement of the quality of life is universally accepted as a desirable norm this concept itself has different connotations which are linked with particular value-systems. The relationship between population change, family size and the quality of life of a country should, therefore be seen in terms of individual and societal values.

The following figure illustrates the interrelationship among various factors which affect quality of life at the micro and macro levels. Population education should help understand the interrelationships of population factors and other factors in the context of total developmental efforts.



INTERRELATIONS AMONG FACTORS AFFECTING QUALITY OF LIFE

In many countries in the Asia and Oceania region there is a cultural and religious resistance to any kind of family planning or sex education and reference to family size norm in the school curriculum. However some countries have included some aspects of these in their school curricula. One thing which must be clear is that population education is not synonymous to birth control, family planning and/or sex education. However, information about these may be included in the context of population education depending on the socio-cultural and religious background of the country. Similarly, it is not a programme designed to persuade people to have a particular family size, either large or small. In fact it is an education to make people aware of the processes and consequence of population change on the quality of life at the micro and macro levels so that they may be in a position to make informed and rational alternative choices in conformity with the developmental goals. Population education was identified as "an educational programme which provides for

a study of the population situation in the family, country, nation and world with the purpose of developing in the students rational and responsible attitude and behaviour towards that situation". 2/

The general goal of population education is to involve students in a learning process. The process should enable them to extend their understanding of population-related issues, broaden perspectives, and develop appropriate skills in analysing and defining the issues in a way which is personally meaningful and socially relevant. They should be in a position to make better-informed decisions on population-related matters which concern them directly and to contribute to the determination and implementation of the most appropriate policies for their country. Inherent in this approach is the concept that the student is not presented with a ready-made course of action and asked to accept it. The course of action which he chooses is developed during the process of coming to understand the problem in its interrelationship with various factors that can change the national or the individual quality of life.

The basic premise underlying the conception of population education is that the consequences of population change for the integrated development and vice versa are of such significance that the new generations of young people need to become aware of them. Population education is one part of the overall development efforts to improve the national and individual quality of life. The quality of life can probably only be achieved through the actions of all people in the society rather than of a few select groups. Individual and national development demands that people comprehend the possibilities of alternative ways of acting and that these alternative behaviours be selected. Population education would help people make informed alternative choices with regard to the solutions of the problems arising out of change in population and consumption of resources in the context of total development at the micro and macro levels.

Population Education Programme in Asia

As a result of the recognition of education as an important instrument of bringing about change in attitude and behaviour, many countries in Asia now have national population education programmes. As no two countries in the region have exactly the same population-related problems, consequently the structure and approaches to population programmes, in general and population education in particular, are unique to each country. Some of these structure and approaches are discussed below.

Structure of National Population Education Programmes

a. As component of curriculum development centres. In Malaysia, Sri Lanka and Thailand, the Population Education Unit is a

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2/ *Unesco, Report of Regional Workshop on Population and Family Education, Bangkok, Unesco Regional Office for Education in Asia, September 1971, p. 13.*

part of the Curriculum Development Centre (CDC). All these countries have a massive CDC infra-structure, of which one unit is concerned with population education. In Malaysia, the eight full-time staff members in population education programme are responsible to the Director of the CDC. Major decisions regarding population education, like other major curricular matters are made by the Central Curriculum Committee, which is the main policy making body of the Ministry of Education. This Committee is chaired by the Director-General, with the two Deputy Director-General and the 15 Chiefs of Divisions and Departments as members. In Malaysia, the National Family Planning Board is the co-ordinating body for all population programmes.

In Sri Lanka, at one point, the Population Education Unit, which is a component of the Curriculum Development Centre, has 10 full-time programme officers. The CDC is headed by a Deputy Director-General of Education (one of three such deputy in Sri Lanka).

In Thailand, the Population Education Unit is also attached to the Curriculum Development Centre. The CDC is under the Director-General of the Department of Educational Techniques of the Ministry of Education.

b. Independent population education programmes. The national population education programmes in Bangladesh, Indonesia, the Republic of Korea and the Philippines are not part of the curriculum development centres, but are nevertheless working side by side with the other curriculum groups under the auspices of the Ministry of Education in curriculum reform efforts.

In Bangladesh, the Population Education Unit, is an attached office of the Education Division of the Ministry of Education. The Population Education Project is headed by a Director assisted by seven programme officers and 21 district officers. There is a district population education officer in each of the 21 district education offices in Bangladesh. Overall guidance and supervision of the programme is provided by an 11-Man Executive Committee chaired by the Secretary Education Division.

In Indonesia, the Population Education Programme is a part of the Directorate of General Primary and Secondary Education. In fact, the head of the project is the Director of the Directorate, and is assisted by an Executive Secretary, two programme officers (one for in-school and one for out-of-school), two assistant programme officers and an accountant. The National Population Education Project (PNPK) is jointly administered by the National Family Planning Co-ordination Board (BKKBN) and the Department of Education (P dan K) Ministry of Education. The National Programme have utilized the services of the primary training schools (SPG) and secondary teacher training schools, particularly in the pre- and in-service education of teachers. Lately, population education projects have been instituted for the Muhammadiyah Schools, the Department of Religion (Agama), the Council of Churches (DGI), and the Department of Defence (ABRI). The Population education projects of these organizations are co-ordinated by the BKKBN.

In the Republic of Korea, a Central Office for Population Education (COPE) takes care of the national population project. It is headed by a Director and assisted by a co-ordinator. The Vice Minister of Education is the chairman of the COPE. While there are only two professionals in the project, so much have already been done from its inception in 1974. The modality followed by COPE is to subcontract materials development to the Korean Educational Development Institute (KEDI) for the in-school, and to the Korean Institute for Research in the Behavioural Sciences (KIRBS) for the out-of-school. Training on the other hand is subcontracted to teacher training institutions.

In the Philippines, the Population Education Programme (PEP) is one of the staff offices of the Minister of Education and Culture. The Minister is, in fact, the overall Director of the PEP. Operationally, the project is implemented through a group of 16 programme officers headed by an Executive Officer and three senior programme officers - one on curriculum and materials development, one on training and one on research and evaluation. After the UNFPA funding, in 1978, the Government has assumed full responsibility for the continuance of the Unit. During the period of UNFPA funding 1973-1978, four regional population education centres mounted in state colleges and universities were instituted to help in the implementation of the programme in the regions (of the country) concerned. For the period 1979-1984, UNFPA has expressed the wish to strengthen the four existing regional population education centres and to create nine (9) new ones.

Emerging National Population Education Programmes

There are five countries in Asia and Oceania which are members of Unesco that are in the process of developing national population education projects. These are Afghanistan, India, Nepal, Pakistan and Papua New Guinea. On top of this, four countries in the South Pacific have indicated their desire to evolve national population projects. These are Fiji, Gilbert Islands, Solomon Islands and Tonga.

About 19 key personnel from the Democratic Republic of Afghanistan have participated in the Unesco regional seminars, workshops, internships and training programmes in population education. On 1 to 6 September, the Government of the Democratic Republic of Afghanistan organized a national training programme in population education with technical and financial support from the Unesco Regional Office for Education in Asia. The training programme was organized by the General Agency for Literacy Campaign (GALC). Involved in the training programme were key people from GALC; Afghan Family Guidance Association; Department of Statistics, Ministry of Education (MOE), Translation Department (MOE); Teachers Training Department (MOE); Radio and Television; Department of Publication, Ministry of Culture and Information; Ministry of Public Health, Khalqi Women Organization; Agricultural Extension Department, Ministry of Agriculture; and Kabul University.

Concepts, Nature and Status of Population Education

In India, the stage is set for a national population education project. In fact, a project document in out-of-school population Education amounting to US$ 1.5 million has already been formulated last year by the National Adult Education Directorate, Ministry of Education. After a series of four regional seminars in India, a project document for the in-school has likewise been formulated.

In Nepal, a national planning and development meeting in population education was held from 6 to 9 February 1979. In this meeting sixteen (16) organizations involved in population education participated. Among other things the meeting reviewed existing programme of population education initiated by various agencies in Nepal; and developed guidelines for the formulation of a national population education programme both in-school and out-of-school. Based on the needs assessment done in April, a national population project is to be formulated in November 1979.

In Pakistan, a needs assessment on various aspects of population problems are conducted by UNFPA on 2-22 April 1979. One of the main components assessed by the Mission, where one of our colleagues in the Unesco Mobile Team on Population Education participated, was on population education. The needs for population education in the formal and non-formal education system have been identified. This will be the bases for the formulation of a national project in population education in November 1979.

Papua New Guinea participated in the Regional Consultative Seminar on Future Directions of Population Education held in Manila on 14 to 21 August 1978. The delegate from Papua New Guinea sees the need for introducing population education in the in-school sector, through the Curriculum Unit of the Ministry of Education, Teacher Training Colleges and the different departments of the University of Papua New Guinea. Recently, a discussion was held with the Assistant Secretary, Planning Services Division, Department of Education, Science and Culture. He expressed interest in a population programme for Papua New Guinea.

From 22 November to 22 December 1978, upon the request of the Governments and UNFPA, two member of the Unesco Mobile Team on Population undertook a mission to four countries in the South Pacific, namely Fiji, Gilbert Islands, Solomon Islands and Tonga. As a result of the mission, these Governments have issued out written statements expressing their desire to integrate population education in the school curriculum. A sub-regional seminar has been planned for key leaders in education from these countries to pave the way for the finalization of national plan and/or project in population education. This subsequent seminar workshop will be conducted on 1-13 October 1979.

Out-of-school Population Education

Much of the discussions in the above pertains to in-school population education. A wide variety of out-of-school population

education is also going on in many countries in Asia and Oceania. However, unlike the in-school programme, many ministries, semi-government and voluntary organizations are engaged in out-of-school population education programmes. To document the nature and extent of out-of-school population education, the Unesco Regional Office for Education in Asia and Oceania has commissioned eight country studies entitled, "Development of Out-of-School Population Education Programmes." These studies are from Bangladesh, India, Indonesia, Republic of Korea, Pakistan, Philippines, Sri Lanka and Thailand.

In Afghanistan, the General Agency for Literacy Campaign (GALC) has a UNFPA assisted Family Health and Adult Education programmes. The main aim of the project is to evolve strategies for the integration of population education into on-going and new adult education and functional literacy programmes for both men and women. In Phase I of the Project, prototype curricula and exemplar teaching-learning units for women were being developed and tested. The Project intends to develop basic literacy and technical skills, into which population education concepts are to be integrated. Likewise, there are plans to train all field workers in population education. Beside this, other organizations such as the Democratic Association of Afghan Women, Family Guidance Association and Radio Afghanistan are also actively involved in population programmes.

In Bangladesh, there are 28 government, semi-government and voluntary organizations engaged in out-of-school population education.

In India, there are at least six major organizations involved in out-of-school population education, namely the - (a) National Directorate of Adult Education of the Ministry of Education, (b) Family Planning Association of India, (c) Bharitya Crameen Mahila Sangh, (d) Indo-Dutch Project for Child Welfare, (e) Literacy House, Lucknow and (f) Youth and Family Planning Programme Council. There are many more, but these six were singled out in the "Case Study on the Development of Out-of-School Population Education Programme in India."

In Indonesia, out-of-school population education is implemented largely through the Directorate General of Non-formal Education and Sports. There are three main divisions implementing out-of-school population education programmes in this directorate, namely: (a) Community education, (b) Youth guidance and (c) Sports.

In the Republic of Korea, the organizations mainly engaged in out-of-school population education are the Ministry of Health, Ministry of Education, the Planned Parenthood Federation in Korea (PPFK), the Korean Institute for Family Planning, the Armed Forces, Industrial Organizations through the Federation of Korean Trade Unions. Most of these organizations have implementing arms down to the village level. For example, PPFK does out-of-school population education through a network of Mother's Club. KIFP works through field workers, clin workers, government administrators, family planning trainers, civic organization workers and university students.

Concepts, Nature and Status of Population Education

In Pakistan, there are at least nine major organizations with out-of-school population education programmes on a nationwide scale.

In the Philippines, eleven (11) government entities and eleven (11) non-government organizations are engaged in out-of-school population education. In November 1978, through a small grant from the Unesco Regional Office, a national planning and development meeting brought representatives of these organizations together so that they might more effectively co-ordinate their activities. As a result of this meeting, a scheme for exchange of expertise has been started.

In Thailand, there are at least 28 out-of-school programmes wherein population education has been incorporated. Many of these programmes are under the auspices of the Adult Education Division, Ministry of Education. A few are with the Ministry of Health, Ministry of Agriculture, the Ministry of Labour and the Ministry of Local Government.

Nature of out-of-school population education. Much of what have been referred to by the country case studies as out-of-school population education programmes are family planning oriented programmes, except those managed by the Ministry of Education or those programmes in literacy and adult education. This is not surprising for indeed in many countries, the initial population programmes are basically family planning programmes, which had a special information, education and communication (IEC) or information, education and motivation (IEM) component. Hence, the tendency to equate population education, with family planning. However, in some countries family planning information campaign was carried out in the narrow sense of the concept, i.e., the creation of awareness about controlling birth using different contraceptive techniques, as well as to alleviate fears on the bad effects of certain techniques and/or the use of the pills. Many information, education and motivation campaigns have, in fact, simplified the population problems, as exemplified by the cliche, 'The small family is a happy family', which hardly applied in the context of many developing countries. In a few countries, the family planning approaches were in many ways either largely propaganda-wise and indoctrinative. People were told that 'to have many children is to add up to their misery, and that of their community and nation'." 2/

Many such family planning IEC in some countries failed to consider many socio-cultural factors, such as the value attached to children, religions and other beliefs, preference for son, children as economic assets, children as insurance for old age, etc. Hence, family planning has been rejected by many, and in many Asian and Pacific countries concerned officials are turning to population education.

2/ *L. de la Cruz, "Population Education: Nature, Goal and Role".*

Nature and Status

Population education is inching its way into educational, population and development programmes in Asia and Oceania. The fact that many people tend to erroneously equate population education with family planning, which is interpreted as birth control, accounts for the reluctance of some countries to accept population education.

Fortunately in Asia and Oceania, more and more countries are realizing that population education is not family planning. Population education content are now enriching the curricular content of selected in-school subjects and out-of-school educational and development programmes.

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Population, Resource Utilization and Development*

D. 16

Today is the age of crises. There are at least half a dozen world problems of crisis dimensions such as population crisis, food crisis, environmental crisis, poverty crisis, energy crisis, raw materials crisis and others. All the countries, developed as well as developing, are responsible for this state of affairs, and all together should find solutions to these problems.

There are two main factors responsible for the present situation: rising population and rising affluence with its characteristic consumption-based life-style. The developing countries, by their high rate of population growth, are contributing to the problems by increasing the number of people, and the developed countries have

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* *A paper prepared for the Group Training Course in Population Education held at the Unesco Regional Office on 13 September - 1 October 1976.*

added to these problems by their rising affluence. Since 1950 the annual growth in global demand for goods and services has been about 4 per cent. The world's population has been growing at a rate of about 2 per cent per annum. The remaining 2 per cent has been absorbed by the rising rate of consumption.

The race among the countries to achieve a higher rate of economic growth is a significant dimension of the'crisis' problems. Economic growth means more consumption of resources. For example, the annual GNP of Western Europe in the late 1960s was about 4.4 per cent which was associated with 7 per cent annual growth in oil consumption. Japan's annual growth of about 12.4 per cent in that period was accompanied by 17.4 per cent rate of oil consumption. Similarly, the North American economy grew at an annual rate of 3.7 per cent during the period 1965-70 and the oil consumption increased at the rate of 4 per cent. The same situation prevails with regard to the consumption of other resources. This does not necessarily mean that there should be no economic growth, but it has to be well planned in the light of the limited natural resources of the planet earth. Most of the developing countries of course need to achieve higher GNP than at present in order to meet the basic needs of man such as food, housing, clothing, education, employment, health services, etc. At the present rate of consumption, it has been estimated that most of the vital natural resources will be exhausted by the end of this century. If there are no natural resources there will not be any economic growth, and there is always a limit to any kind of growth. Growth is a determinant process and <u>self-limiting</u>. It becomes <u>self-destructive</u> when it exceeds the capacity of organization and the capacity of the environment.

In today's world, no country, however large and wealthy can any longer live independently of other countries. The economic development of any country is dependent on the resources and/or technological know-how of other countries. All countries share the common global ecosystem. The dependence of national economies on international resources is rising with each passing year. For example, the United States influences the composition of diet in many countries in the world by its decisions on exportable surplus of food grains. On the other hand, the size of the automobiles and the thermostatic levels in the United States and other countries are being influenced. to a great extent, by oil production and export decisions in the Middle East. In the new conditions exemplified by the global crisis syndrome, the world community has been tranformed to a world system. Each country or region has its own contribution to make to the organic or differential growth and development of humanity. In such a system the over-growth of any one part of the world means non-growth or under-growth of others. With increasing scarcity of resources, the harsh realities are that for some to consume more means that others must consume less.

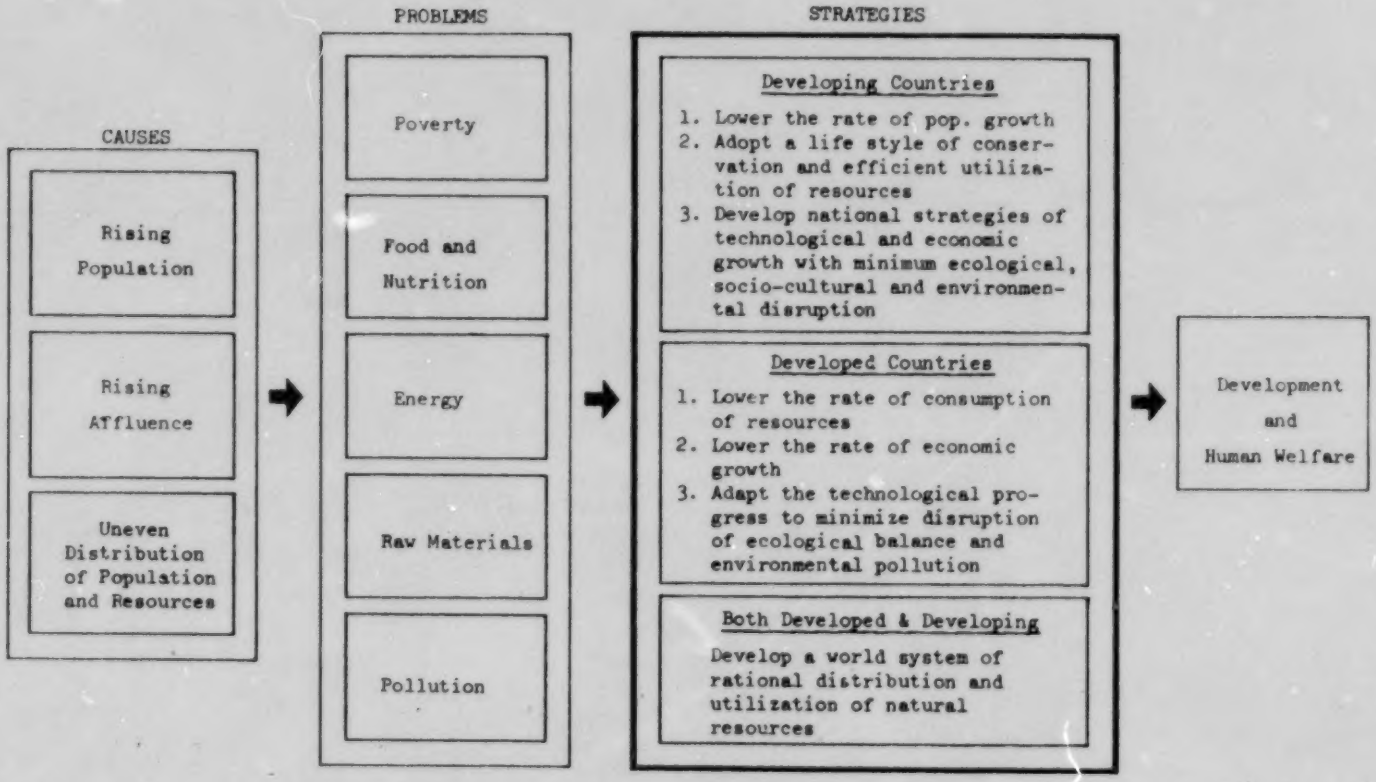
Let us consider the direct effect of rising affluence on the basic problem of food. Until the last few decades there have always been food reserves in many countries. In fact, during the 1950s one of the major problems of the International Agricultural Trade was

considered to be that of food surplus. During the recent years the total global reserve of food grains has fallen and has reached a very low level as a result of the 1972-73 drought conditions and bad harvests in most of the countries. With the release to production of all the land in the so-called 'land bank' in America, the production rose again and for 1973-74 once more it looked that at least the present level would be maintained. Even in these so-called 'good' days, about half the world's population, that is about 2,000 million people, is inadequately nourished and at least 460 million people are actually starving. Crop failure in the food surplus countries such as the United States in any one year would mean starvation for more people around the world. Another factor that we must realize is that we cannot continue increasing food production beyond a certain limit.

The increase in population means an increasing demand for food. In addition there is a trend in the dietary habits of the people in developing as well as developed countries which is contributing equally to the problem of food supply. With the increase in economic status of the people in many countries, their composition of diet has been changing. The effect of rising affluence on the world's demand for food is perhaps best understood by examining the grain requirements in different countries. During 1969-70 the high-income countries, forming about 30 per cent of the world population, accounted for 51 per cent of the total consumption of cereals. The higher rate of consumption of cereals in the developed countries is due to indirect utilization. The cereals which can be directly consumed by man are fed to cattle. Even protein-rich cereals, such as soya beans, form an important ingredient in livestock and poultry feeds throughout the world. In order to produce one pound of beef, we have to feed the cattle 7 to 8 pounds of cereals, over and above other animal fodder. This is because not all the grains which are fed to the cattle are converted into meat: from 80 to 90 per cent of the energy is wasted during transfer from cereals to meat. The cereals which are thus fed to the cattle to get one pound of meat could instead feed 7 or 8 people.

Food and Agriculture Organization (FAO) projections indicate that between 1970 and 1985, there will be relatively higher annual rates of increase in demand for fish (3.4 per cent), meat (3.1 per cent) and cheese (2.8 per cent) in preference to cereals (2.4 per cent) per annum. In all the regions of the world, the use of cereals for livestock feed would grow more rapidly than the demand for direct consumption. By 1985, the developing countries would use 14 per cent of the total demand for cereals as cattle feed, where as 66 per cent of the overall cereal demand of developed countries would be utilized as cattle feed. On the per-capita basis the total demand for cereals in developed countries, which was nearly three times that of developing countries in 1970, would continue to grow more rapdily than in the developing countries. Assuming no substantial changes in the production techniques, it is assumed that the demand for cereals as livestock feed will increase from about 420 million tons in 1970 to 650 million tons in 1985, of which approximately 520 million tons would be required by developed countries.

HUMAN WELFARE AND DEVELOPMENT MODEL


CAUSES
Rising Population
Rising Affluence
Uneven Distribution of Population and Resources
PROBLEMS
Poverty
Food and Nutrition
Energy
Raw Materials
Pollution
STRATEGIES
Developing Countries
1. Lower the rate of pop. growth
2. Adopt a life style of conservation and efficient utilization of resources
3. Develop national strategies of technological and economic growth with minimum ecological, socio-cultural and environmental disruption
Developed Countries
1. Lower the rate of consumption of resources
2. Lower the rate of economic growth
3. Adapt the technological progress to minimize disruption of ecological balance and environmental pollution
Both Developed & Developing
Develop a world system of rational distribution and utilization of natural resources
Development and Human Welfare

The per-capita amount of grain consumption directly and indirectly continues to increase as per-capita income climbs. The dietary habits of most of the countries in Western and Eastern Europe and Japan are now more or less comparable to those of the United States in 1940. As income continues to rise in these countries, a sizeable fraction of the additional income is being converted into demand for livestock products, particularly beef. A similar trend in dietary habits is visible in developing countries with the increase in their per-capita income. Because many countries lack the capacity to satisfy the growth in demand for livestock products entirely from indigenous resources, they are importing increasing amounts of either livestock products or feed grains and soya beans with which to expand their livestock production. As a result, in recent years soya bean has become one of the leading export products of the United States - surpassing export sales of wheat, corn and even high technology items. As yet, no nation appears to have reached the level of affluence where its per-capita grain requirements have stopped rising. During 1964-66 the per-capita consumption of grain consumed by an average Canadian, American and British was five times, four times and three times respectively that of an average Indian. Similarly, during 1971, energy use in the United States, United Kingdom and France was 96 times, 47 times and 34 times respectively that of Indonesia and Pakistan. Even in countries where population growth is less than 1 per cent per annum, the demand in domestic food supplies is much higher. For example, in Japan and France, where population is growing at about 1 per cent per annum and in West Germany where population has almost stopped growing, there is a trend towards higher demand for food supplies. This is attributable to the growth of per-capita income in these countries and due to change in their dietary habits.

For all the countries, developed and developing, the basic challenge today is to design a developmental strategy that will provide a relatively satisfactory standard of living for everybody with minimal level of resource consumption. As has been rightly pointed out in "The Ecologist, A Blue Print for Survival" (1972) we should try to develop a world system in which there is (i) minimum disruption of ecological processes; (ii) maximum conservation of material and energy or an economy of stock rather than flow; (iii) a population in which the individual can enjoy, rather than restricted by, the first three conditions. In order to have such a system we shall have to reverse the trend of over consumption and wastage of resources to conservation and efficient utilization of resources.

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Population, Resources and Environment*

D. 17

The growth of population has become one of the most fundamental of the human problems today all over the world. Due to the increasing population pressure most countries in the world are confronted with the problems of food supply, and adequate provisions for the education and health of people. This has put a limit on the pace of improvements in the standard of living and quality of human life. In the desire to have a better quality of life there are new demands for more schools, better education, better health facilities, more transport and housing facilities and more job opportunities. Thus, the economy of developing country is put to additional pressure by the ever growing numbers of people. Because of this big chunk which population growth takes out of any increase in a country's national income, it becomes very difficult, rather impossible, to provide better civic services and amenities which go to improve the quality of life. The inflow of people towards the cities in search of jobs has created additional problems of unemployment, an increase in crime, violence and other anti-social activities. Even though most of the developing countries have made rapid progress in total economic growth, faster in percentage terms than many more industrialized nations, their far greater rate of population growth has made development in per-capita terms very slow. The risks to the improvement of the quality of life involved in the problems arising out of growth of population are of such magnitude that even the slightest delay makes them more complicated and difficult to be handled successfully.

Population Balance in An Ecosystem

An ecosystem consists of the organic environment and the inorganic environment, which are interrelated. Organic environment comprises all manifestations of life whose activities impinge upon the individual or groups of individuals. This includes members of the same species as well as different species present in an area. Inorganic environment includes all the mechanical and non-living conditions that surround the organism, such as light, air, humidity, temperature, minerals or topography. Man is the most dynamic element in the ecosystem, because he changes most of the other elements in the environment.

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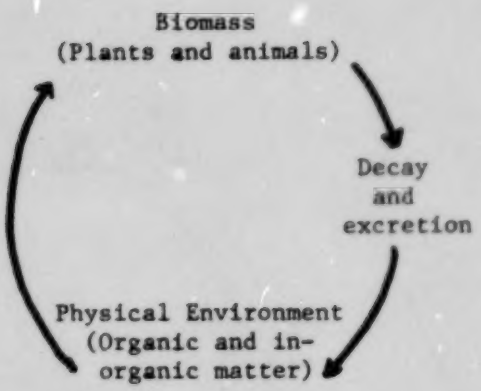
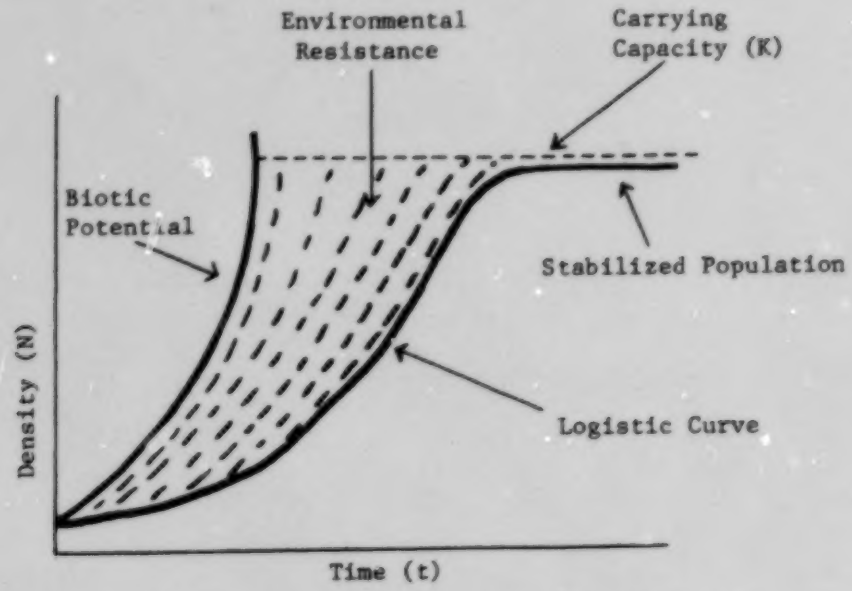
* *Paper presented to the Group Training Course on Population Education held at the Unesco Regional Office, Bangkok 26 September - 14 October, 1977.*



Relation Between Biomass and Physical Environment

Small organisms such as bacteria, amoeba or yeast possess a fantastic capacity of population growth. A bacterium dividing every twenty minutes would produce a colony one foot deep over the entire earth in a day and a half. One hour later, the layer of bacterium would be over our heads. In the same way if man continues to grow at the present rate of exponential growth for 900 years, there would be some sixty million billion people. This is about 100 persons for each square yard of the earth's surface, land and sea. 1/ This ability of the population to grow is called the "biotic potential". This is an indication of the theoretical rate of growth, not of an actual one. Different animals have different biotic potential. For example, man has lower biotic potential than amoeba or bacterium but has higher biotic potential than many animals such as elephant or tiger. But under natural conditions no animal or plant can grow to its fullest potential and is checked by what is called the "environmental resistance" which may include both the physical environment as well as the cultural conditions. The check by the environmental resistance exists when one or more factors of the environment become limiting and decrease the birth rate or increase the death rate or both. This limit of biotic potential of a population imposed by the environmental resistance under given sets of conditions is called the "carrying capacity" of that environment. The relationship between the biotic potential, population growth and environmental resistance in the case of animals and plants forms a characteristic sigmoid or "S" shaped or logistic curve.

1/ *Paul R. Ehrlich, The Population Bomb, New York, Ballantine Books, 1968.*



Theoretical Relationship Between Biotic Potential, Environmental Resistance and Logistic Curve

Biotic Potential $= \frac{DN}{DT} = TN$

Environmental Resistance $= 1 - \frac{K-N}{K}$

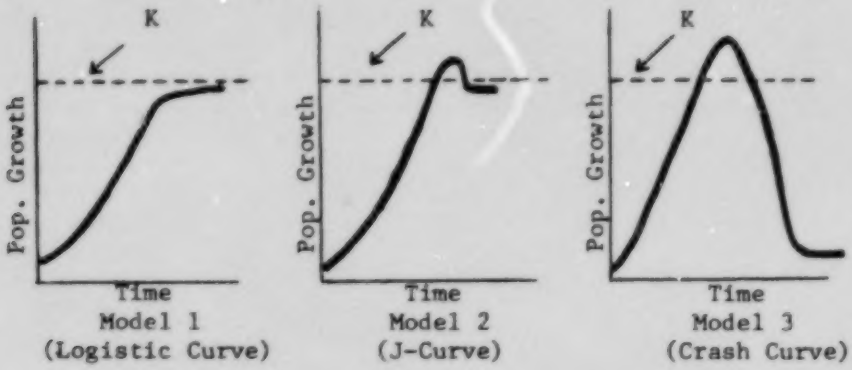
Logistic Curve $= \frac{DN}{DT} = TN - \frac{K-N}{K}$

D = Death Rate
N = Population
T = Time Period
K = Carrying Capacity

Various ecological or biological models which are applicable in the case of different plants and animals may also be applicable in the case of man. The growth of populations is related to the carrying capacity of the environment which in the case of animals is not altered by the biomass whereas in the case of man the cultural factor changes the environment. For example, man can increase the production of food or can reduce his consumption pattern. But ultimately there are limits to the change of the environment and thus the laws which apply in the case of other living things may apply to man as well.

There are at least three models which can be constructed on the basis of the relationship between the biotic potential and the carrying capacity of the environment. In one model the rate of population growth decreases before the environmental limits are reached. In this case the population growth curve is S-shaped i.e. logistic. A second model is when the population shoots the limits of the

carrying capacity of the environment and then dies back in either a smooth or an oscillatory way. This results in a "J-shaped" curve. A third model may be that population overshoots the carrying capacity of the environment, thereby decreasing the non-renewable resources, and then falls sharply. This causes what is called the "crash" curve.



Models of Population Growth in Nature

Human Population as a Part of the Natural Environment

Man is biologically similar to animals and is a part of the natural system but he is culturally different from other animals. Most animal populations exhibit a self-regulatory mechanism. The Malthus theory suggests that population increases in geometric progression and food in arithmetic progression and that at some point the population overtakes the good supply. At that point the population will reach its limits. Darwin and Wallace proposed the theory of natural selection. According to this theory there is competition for food and other resources and the fittest are selected while the unfit are eliminated from the population. From the discussion of animal population it seems that Malthus theory as well as Darwin and Wallace are not completely right. Self-regulation or 'feedback mechanism' of most animal populations is a law of nature. It is rare in animal population, except in climatic catastrophe, that it will expand beyond the limits of available food supply. In other words the population of animals seldom challenges the carrying capacity of the environment. A variety of self-regulatory mechanisms - physiological and behavioural - start functioning and regulating the populations before the food supply or resources are exhausted. By one means or another such as infanticide and cannibalism, spontaneous abortion, parental neglect, genetic deterioration, death by stress and reduced fertility rate etc. keep the population of animals within the limits of the carrying capacity of the environment.

The population of primitive man was maintained at an optimum level by a number of factors. There were traditions which helped to keep the population down. Some of these traditions were just similar

to animals. Some of the traditions practised by the primitive man were infanticide or compulsory abortion, cannibalism, head-hunting, human sacrifice, ritual murder, taboos against intercourse during the period of lactation, territorial defence or homerange etc. It was the industrial revolution during the 18th century which effectively destroyed the older traditions, especially cannibalism, head-hunting and human sacrifice. The advent of modern medicine and technology also reduced the infant death rates and general mortality rates. The humanistic pre-occupation with the prolonging of age, saving the handicapped, physically and mentally defectives etc. also added to the population increase.

Through the cumulative cultural advancement and new technological discoveries man has been changing the environment to meet his needs. Until recently he was not apprehensive of the repercussions of the disequilibrium being caused in the ecosystem. At the macro level, two major factors seem responsible for the disequilibrium in the ecosystem: population growth and economic development. The latter is meant to meet the needs and demands of the former.

Effects of Human Population Growth on the Environment

There are people who believe that environmental problem is primarily a problem of the rich and the more affluent countries. The same kind of argument was advanced in the Stockholm Conference. If we accept this argument then the problem of environmental pollution should not be a matter of concern for the developing countries. But the fact is that the developing countries are also suffering from environmental deterioration, and will most probably head towards more pollution with their higher rate of population growth and efforts for industrialization. At present, the problem of environmental deterioration in the developing countries is not due to industrialization but due to their poverty and lack of development. The set of problems of environment arising out of poverty has been neatly summed up by Gamani Corea of Sri Lanka as follows:

> Ours are the problems of poor societies: the problems of bad water, poor housing, disease and sickness, lack of sanitation and sewage facilities, inadequacy of nutrition and vulnerability to natural disasters. These problems have not arisen from an excessive degree of development; rather, they reflect the inadequacy of development. Thus, while the rich countries may look upon development as the cause of environmental destruction, the poor countries cannot but look upon development as the cure, as the means of remedying basic environmental problems. In this sense, therefore, the concern with environment in the developing world is but an aspect of the commitment to development. There is no inherent antagonism, no inherent conflict between the goals of environment

and the goals of development. They are but facets of the same problem. 2/

The pollution of human environment is a function of density of population (DP) and density of gross national product (DGNP). The index of pollution potential (IPP) can be calculated by using the following formula:

$$IPP = \sqrt{\frac{DP^2 \times PI}{k}}$$

Where IPP is the index of pollution potential
DP is the density of population
PI is the per capita income
k is the constant = 100

In 1970 the IPP of Japan was about 92.1 which is about seven times the IPP of the United States which was 13.3 The IPP of Hong Kong was almost eight times, and that of Singapore nine times, the IPP of Japan. If the current methods of production and development of Japan are adopted by countries in Asia, and by the year 2000 these countries are able to achieve the current Japanese standard of living, almost all the countries in the region except Australia, Iran, Laos, Mongolia, New Zealand and Papua New Guinea will have a greater IPP than 13.3. Countries which then will have greater IPP than the current IPP of Japan include Ceylon, Republic of China, Hong Kong, India, Republic of Korea, Pakistan, the Philippines and Singapore. 3/

The cost of cleaning air, water and solid waste pollution for the combined six-year period 1970-1975 has been estimated by the U.S. Government at US$ 105,200 million. This is in addition to what is already being done to meet the environmental problems. The cost for the year 1970 was estimated at US$ 9,300 million and for 1975 at US$ 18,300 million, indicating a doubling of the cost in a period of six years. 4/ The per capita additional expenditure for cleaning the environment is estimated at US$ 46.00. This means that on a per capita basis the United States will be spending the equivalent of the current per capita income of the developing countries in the Asian region. Whether the developing countries can take out a big chunk of money from their developmental budget for clearing the environment is very doubtful.

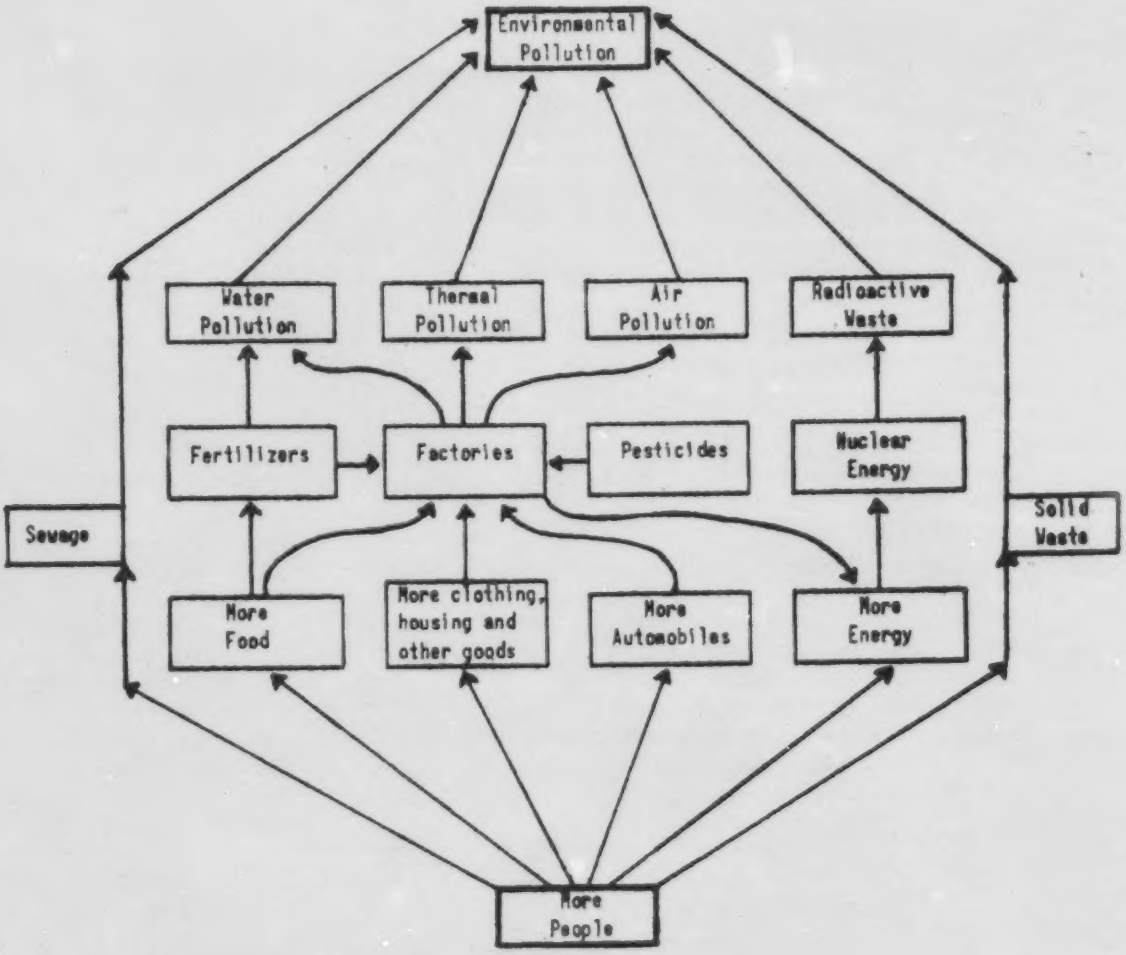
2/ *United Nations, Reports and Selected Papers of the Seminar on Ecological Implications of Rural and Urban Population Growth, Asia Population Study Series No. 10. Bangkok, ECAFE 1971, p. 31.*

3/ *United Nations, Asian Population Series No. 10, Bangkok, ECAFE 1971, p. 36.*

4/ *Newsweek, 16 August 1971.*

In their curiosity to achieve a higher level of industrialization to raise the standard of living, developing countries might be tempted to regard ecological problems as having relevance only for the developed countries. The developing countries of Asia should benefit from the experience of Japan which had unprecedented rapid economic growth in recent years and which, for that reason, had also had to face severe problems of environmental disruption and degradation.

The relationship of increasing population and the environmental deterioration has been shown in the following figure. More people need more food, energy, housing, clothing, transport, etc., all of which lead to environmental pollution.



Relationship of Population and Environmental Pollution

Let us discuss the effects of population increase on the environment in relation to food, which is one of the most important basic needs of man. If there are more people we need more food. There are estimates that population growth alone will call for increases in food supplies of 40 per cent over the period 1965-1980 and 120 per cent over the period 1965-2000. Considering the need for better nutrition and the effect of increasing income on food demand, the actual increases in food supplies called for will be much larger. It is estimated by the FAO that in order to provide sufficient quantity of food for the growing population and to meet progressively the needs of the vulnerable groups of the population for better quality of diet, the total food supplies of the developing countries will have to be increased by 75 per cent over the period 1965-1980 and 225 per cent over the period 1965-2000. 5/

In order to get more food we need more water for irrigation, more fertilizers, more pesticides, more fuel, all of which have a deleterious effect on the environment. For example, intensive irrigation often creates the problem of salinization of soil thus making it unfit for cultivation. The building of dams, canals, ponds, etc., for irrigation poses its own problems in addition to defacing the landscape.

Some of the fertilizers used in agricultural production are washed away into the streams and lakes. The increase in the concentration of fertilizers in water leads to what is called 'eutrophication'. The higher concentration of these fertilizers encourages abundant growth of algae and other water plants. When the plants die, oxygen needed by fish and water animals is used in the decay process. The result is the mass death of animal life in rivers and lakes. Lake Erie in the U.S. is now almost biologically dead mainly because of the abundant growth of algae and other water plants. The excessive use of inorganic nitrogen fertilizers lead to a loss of humus from the soil resulting in the breakdown of the nitrogen cycle. This may expose human beings to dangerous germs from the soil, i.e. the germs which previously have not come into contact with man and were in balance with different bacteria in the nitrogen cycle.

In fresh water reservoirs, there is additional danger of dissolved nitrates in drinking water. Nitrates in the fertilizers change into nitrites in the human intestinal tract, which is a serious poison and is more hazardous to infants. A number of cities in regions of extensive modern farming have higher than recommended concentration of nitrites in their drinking water.

5/ United Nations, Human Fertility and National Development, New York: United Nations, 1971, from Population and Environment, Supplement to IPP News (June 1972, p. 3)

The use of pesticides and insecticides not only disturbs the ecological balance in an ecosystem but has been the cause of disease and death in many species of animals, especially birds. One commonly used pesticide is DDT. According to SCEP, 34 per cent increase in world food production of 1951 to 1966 required increased investment in nitrogenous fertilizers of 146 per cent and in pesticides of 300 per cent. At the same time they have created a number of serious problems, notably resistance to pesticides. Some 250 pest species are resistant to one group of pesticides or another. The rapidity with which the resistance is acquired depends on the generation time of the pest. The most widespread resistance has been observed in houseflies, mosquitoes, cockroaches, bedbugs and cattle flies. Twenty-one species of the mosquito genus Anopheles alone have developed resistance to organochlorine insecticides. The spread of DDT and other organochlorines in the environment has also resulted in alarming population declines among woodcock, grebes, various birds of prey and seabirds, and a number of fish species, principally the sea trout. The oceans are an ultimate accumulation site of DDT and its residues.

Conclusion

Population growth will present serious consequences for any country in the world, especially those which are relatively economically less developed and endowed with fewer natural resources. The higher the rate of increase of population, the larger is likely to be the effort needed to raise the per-capita living standard. Given the overall shortage of land, capital and natural resources relative to population, an effective reduction in the rate of population growth seems indispensable for the increase in per capita income and the standard of living of the people.

What kind of controls will apply to the modern man, only time can show. But if we take nature as a model, there are two possibilities. One is the sane and human programme of population change and the second is death by stress. Since our population problem has a cultural cause, we must provide a cultural solution. If we fail to do so, there is no doubt that the law of nature which applies to other animal populations i.e. death by stress, may bring the population crash. It is also possible that the stress due to density may start showing its affects on the biological mechanisms of human beings, causing reduced fertility as is shown in the case of some animals. Other factors which are the by-products of cultural change, such as automobiles, nuclear bombs, drugs or pollution may also bring the population down by increasing the death rates.

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Population Education Vis-a-Vis Family Planning*

D. 18

One of the concerns that surfaced in the Regional Consultative Seminar on Future Directions of Population Education held in Manila on 14 to 21 August 1978 is the need to reconceptualize the framework of population education. A section of the report reads,

> One issue that kept coming back in the course of the discussion is the role of population education in relation to family planning. In most of the countries it was reported that many people tend to equate population education with family planning. The relationship between population education and family planning information, education and communication appears ambiguous. Hence one participant pointed out the need for re-examining and re-conceptualizing population education. Questions like the following were raised: What are the limitations of family planning? What can population education do to make up for the limitations of family planning? Are they really directed towards answering the same goal? Does population education hold better prospect for success than family planning? 1/

Indeed in many countries, the initial population programmes are basically family planning programmes, which had a special information, education and communication (IEC) component. Hence, the tendency to equate population education with family planning. However, in some countries family planning information campaign was carried out in the narrow sense of the concept, i.e., the creation of awareness about controlling birth using different contraceptive techniques, as well as to alleviate fears on the bad affects of certain techniques and/or the use of the pills. Many information, education and motivation campaigns have, in fact, simplified the population problem, as exemplified by the cliche, "The small family is a happy family", which hardly applies in the context of many developing countries.

In a few countries, the family planning approaches were in many ways either largely propaganda-wise and indoctrinative. People

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* *Paper prepared for the Intensive Training Course for Key Programme Personnel from the Abri (Armed Forces), Department of Agama (Religion), DGI (Council of Churches) and Muhammadiyah (Islamic Schools).*

1/ *Future Directions of Population Education. Report of the Regional Consultative Seminar on Future Directions of Population Education, Manila: 14-21 August 1978.*

were told that "to have many children is to add up to their misery, and that of their community and nation".

In some countries in the region, family planning programmes which took the above cited orientations, failed to consider many socio-cultural factors, such as the value attached to children, religious and other beliefs, preference for son, children as economic assets, children as insurance for old age, etc. Hence, family planning was rejected by many; and therfore, not successful as expected. Yet, the population situation seems to indicate that population programmes must succeed; especially in the developing countries of Asia. The participants in the Consultative Seminar earlier mentioned noted that:

> The total population of twenty-five countries comprising the region was estimated 2,436 million in 1975, with an average annual growth rate of 2.0 per cent in the period 1965-1975.
>
> Of the total population in the developing countries of the world 72 per cent are in the developing Asian region. Many of the member countries in the region are found in the top list of twenty most populated countries in the world; e.g., Bangladesh, India, Indonesia, Philippines, etc. The growth rates of these countries range from 1.9 per cent to 3 per cent. Most of the countries are experiencing high and increasing growth of density of population ranging from 140.2 persons per square kilometre to 1,500 persons per square kilometre. The population problem is further aggravated by high infant and maternal mortality, and a relatively young age distribution which suggests a high dependency ratio. Since majority of the land areas are agricultural, the bulk of the population live in the rural areas which offer very scarce resources. Worse, in most of these countries, population growth rate is increasing at a faster rate than their economic growth rate. Consequently, these population and demographic characteristics are now having negative repercussions on income distribution, employment, education, health service, and food distribution throughout the Asian region. 2/

Population Education

Many sectors have responded to the call for action to help solve the population problem. Population education is the response of the education sector to widespread public concern about population problems and issues. In some countries, population education was

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2/ *Ibid.*

instituted in response to the recommendation of the World Population Plan of Action, "that Governments consider making provision, in both the formal and non-formal educational programmes for informing their people on the consequences of existing or alternative fertility behaviour for the well-being of the family, for the educational and psychological development of children and for the general welfare of society, so that an informed and responsible attitude to marriage and reproduction will be promoted". 3/

As an educational programme, it means affording young and adults knowledge and understanding about population dynamics, the causes and consequences of population growth, the interrelationship of population change to development, as well as the components of quality of life - health, housing, environment, food and nutrition, education, employment, and social services.

Not that knowledge and understanding of these population related concepts are ends, but rather are instruments for a thorough evaluation of the problem, which will hopefully result in desirable changes in attitudes and values, and more important appropriate changes in behaviour in dealing with population related problems which are impinging on individual, family, community and national development efforts.

It should be noted that population topics have always been in textbooks, particularly the social studies, biology and home economics. However, these have in general been treated in a neutral manner, and invariably as facts to be memorized rather than tools for sound decision-making and attitude change. As one of our publications states,

> Demographic data and population studies provide the content, but are subject to varied and often conflicting interpretations by individuals depending on their value-laden frames of reference. It is precisely because people impute values to demographic variables as they impinge on savings, investment, employment, health, productivity and income distribution that population education becomes imperative. Recent experience in the Asian region has shown sadly and graphically, that demographic behaviour cannot be controlled solely by external compulsion. And the translation of national priorities into individual behaviours is very difficult although an essential step towards ameliorating the challenges presented by rapid demographic change. It is, therefore, the ultimate goal of population education not to indoctrinate people superficially regarding issues which affect them at the most basic level. Rather it is

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3/ *World Population Plan of Action, United Nations, Bucharest, 1974.*

> the goal of population education to pose realistic alternatives, to examine likely consequences, to enable the individual to formulate rational decision-making behaviour and to enable them to act upon these decisions in the future. 4/

Population education is not meant to replace family planning, rather it is meant to be a supplementary and/or complementary programme. While family planning may be concentrating on married couples, population education has targeted young people in-school, and out-of-school youth and adults. Population education is broader than family planning, not only in content coverage but also in the clientele being reached. If, in fact, population education is successful, then it would be a lot easier for family planning workers to increase the number of adopters, and hopefully, once an adopter, never a dropout.

Population education is not meant to be another subject in the crowded curriculum of schools. It is meant to enrich and innovate in-school disciplines which deals with population related issues. Curricular contents are enriched by up-to-date demographic data and the more recent findings of population studies. In many ways it has also meant renovating the methodology of the discipline to which it is integrated. As population education are problem centred, inquiring and decision-making approaches have been utilized in tackling population issues and problems. Likewise, population education is value laden, hence the use of values clarification, especially in dealing with the pros and cons of population growth, such as:

Pros	Cons
1. Health Values	
Children often die. Since children often die, it is necessary to have more children to make sure that someone will inherit the family wealth.	Family health is insured. The mother's health is preserved. Father need not work so hard to be able to provide more than enough for the family.
2. Economic Values	
Economic asset and security for old age. Children are economic assets and are social security for old age.	Higher standard of living. Living expenses are less when you have a small family. The family can save to buy all comforts in life plus money for recreation.

4/ *Regional Programme and Activities in Population Education, Bangkok, 1978. p. 2-3.*

3. Family Welfare Values

Big families are educative and happy. The bigger the family the more chances to learn from one another. Futhermore, big families are happy families.

Better child rearing and tensionless families. Children are considered "jewels," not nuisances, hence reared better. There is no tension brought about by insufficient resources in the family.

4. Marriage-related Values

An only child is a spoiled child. Children from smaller families are prone to adjustment problems, hence less likely to easily adjust with their future spouses

Happy dispositions. Children from smaller families are more unlikely to suffer tension while being brought up, hence are likely to have happy dispositions, even during marriage.

5. Personality-related Values

Ego support . The more children the more husbands are able to demonstrate their virility and manliness.

Self-actualized. The less the number of children, the more likely will they realize their ambitions.

6. Moral Values

God's will. Large families are God's blessing.

Morally irresponsible. A person who has more children than he can decently bring up is morally irresponsible.

7. Cultural Values

Attribute of status. Parents of the year awardees are those who have many successful children.

Social problem. Parents with big families are likely to add to social problems.

Likewise, in the out-of-school, population education is never meant to be a separate educational programme. As one of our papers states,

> Population education for the out-of-school sector acquires more relevance when interwoven into areas that pre-occupies or interest the learners or are viewed as a solution, if not remedy, to actual day-to-day problems. It is for this reason that population education has been integrated in various non-formal education programmes including labour training and education, agricultural extension, food and nutrition campaign, skill development, social

welfare drives, environmental education, urban renewal, literacy programmes, manpower development, rural transformation and development and so on. 5/

Population education in most countries is an integral part of overall national policies for population planning. And population planning is a component of most national development plan. Indeed, population education is only one of the policy interventions to mitigate the negative impact of population growth within the family, the community and the nation.

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5/ *Future Directions for Regional Sectoral Programme in Population Education in Asia and Oceania. Bangkok, June 1978.*

Approaches to Curriculum Development in Population Education in Asia and Oceania*

D. 19

NATURE OF POPULATION EDUCATION

Population education is relatively a new innovation in education. Population education programmes in Asia and Oceania are the response of the education system to the national concern for population issues. Since the first Regional Seminar on Population Education organized by UNESCO Regional Office for Education in Asia in Bangkok in 1970, a number of countries in Asia (Bangladesh, Indonesia, Republic of Korea, Malaysia, Philippines, Sri Lanka and Thailand) have undertaken national population education programmes in the formal education system with the technical assistance of UNESCO and financial support

* Paper prepared for Regional Seminars and National Conference on Population Education held in India from 26 March to 30 April 1979.

of the United Nations Fund for Population Activities (UNFPA). Many countries in Asia and Oceania are in the process of developing national programmes in population education.

Most countries with national population education programmes consider population education as part of a total curriculum reform movement rather than a separate isolated curriculum activity. In countries such as Malaysia, Sri Lanka and Thailand, population education programmes are part of the work of a Curriculum Development Centre (CDC). The introduction of population education content in the curriculum is the responsibility of all the curriculum units of CDC. In the case of countries such as Bangladesh, Indonesia, Republic of Korea and the Philippines, population education programmes are not part of CDC but work side-by-side with the department of curriculum and textbooks of the Ministry of Education.

Since the very concept of population education was formulated in response to population problems and to supplement family planning, it is sometimes misunderstood, both within and outside the educational system, as another name for sex education or family planning education. This misunderstanding has been one of the obstacles to initiating population education programmes in some countries in Asia and Oceania. In many countries there is a cultural and religious resistance to any kind of family planning or sex education in the school curriculum, although some countries have included some aspects of these in their school curricula (Philippines and Republic of Korea). Population education is not synonymous with birth control, family planning or sex education, although information about these may be included in the content of population education depending on the Socio-cultural and religious background of the country. Similarly, it is not a programme designed to persuade people to have a particular family size. In fact it is an education to make people aware of the interrelationships between population change and the quality of life at the micro and macro levels so that they may be in a position to make informed and rational choices in conformity with personal and developmental goals. The basic premise underlying the concept of population education is that the consequences of population change for integrated development and vice versa are of such significance that the new generations of young people need to know them well. Population education is one part of the overall development efforts to improve the individual and national quality of life.

APPROACHES TO CURRICULUM DEVELOPMENT

Different approaches for developing curriculum in population education have been used by different countries in Asia. Being of recent origin, population education has no clearly marked content boundaries. It is inter-disciplinary in nature and related to various subjects. The problem of overcrowded curricula makes it difficult to establish population education as an independent subject in schools. Most countries have therefore used an integration approach to include population education concepts in different subject areas.

Although integration approach has been used in all the countries in Asia having population education programmes, it has been felt that population education concepts tend to be lost in the process of integration and the whole purpose of population education gets diffused. Partly because of this reason, some countries have now started thinking of introducing population education as a separate course at the secondary and tertiary levels. The same view was expressed by the participants in the Unesco Regional Consultative Seminar on Future Directions of Population Education held in Manila from 14-21 August 1978.

The following matrix gives an overview of approaches used by different countries for integrating population education at the elementary and secondary levels.

Country	Grades	Subjects of Integration
1. Bangladesh	4-12	Bengali, natural science, social science, home economics and social welfare, mathematics, vocational and technical education.
2. Fiji	Form 1-4 (Secondary level)	Social studies and biological science.
3. India	1-10	Social studies, natural science, geography, economics, languages, sociology.
4. Indonesia	4-6	Natural science, pancasila, social science, religion.
	7-12	Natural science, religion, geography, Pancasila, sports and health, economic co-operative.
5. Republic of Korea	4-12	Social studies, home economics, physical education, geography and science.
6. Malaysia	4-9	Science, geography, civics, history, health education, mathematics (in primary school), and home science (in secondary school).
	10 & 11	Strategy not yet decided.
7. Nepal	4-10	Social studies, geography, science, home science, health and panchayats.
8. Pakistan	1-10	Social studies, geography, mathematics, health education, home economics.

Country	Grades	Subject of Integration
9. Philippines	1-6	Social studies, health education, elementary science, mathematics and home economics (in grades 5 and 6).
	First & Second Year of High School	Social studies, health education, mathematics, home making and science (in second year).
	Third & Fourth Year of High School	Social studies and health education.
10. Sri Lanka	6-9	Science, mathematics, health education, social studies and language.
11. Thailand	1-12	
	Primary	"Life experiences".
	Lower Secondary	Social studies and in an elective course called "environment".
	Upper Secondary	As a separate elective course in the general education schools and a required course in vocational education schools.

Design for Curriculum Development in Population Education

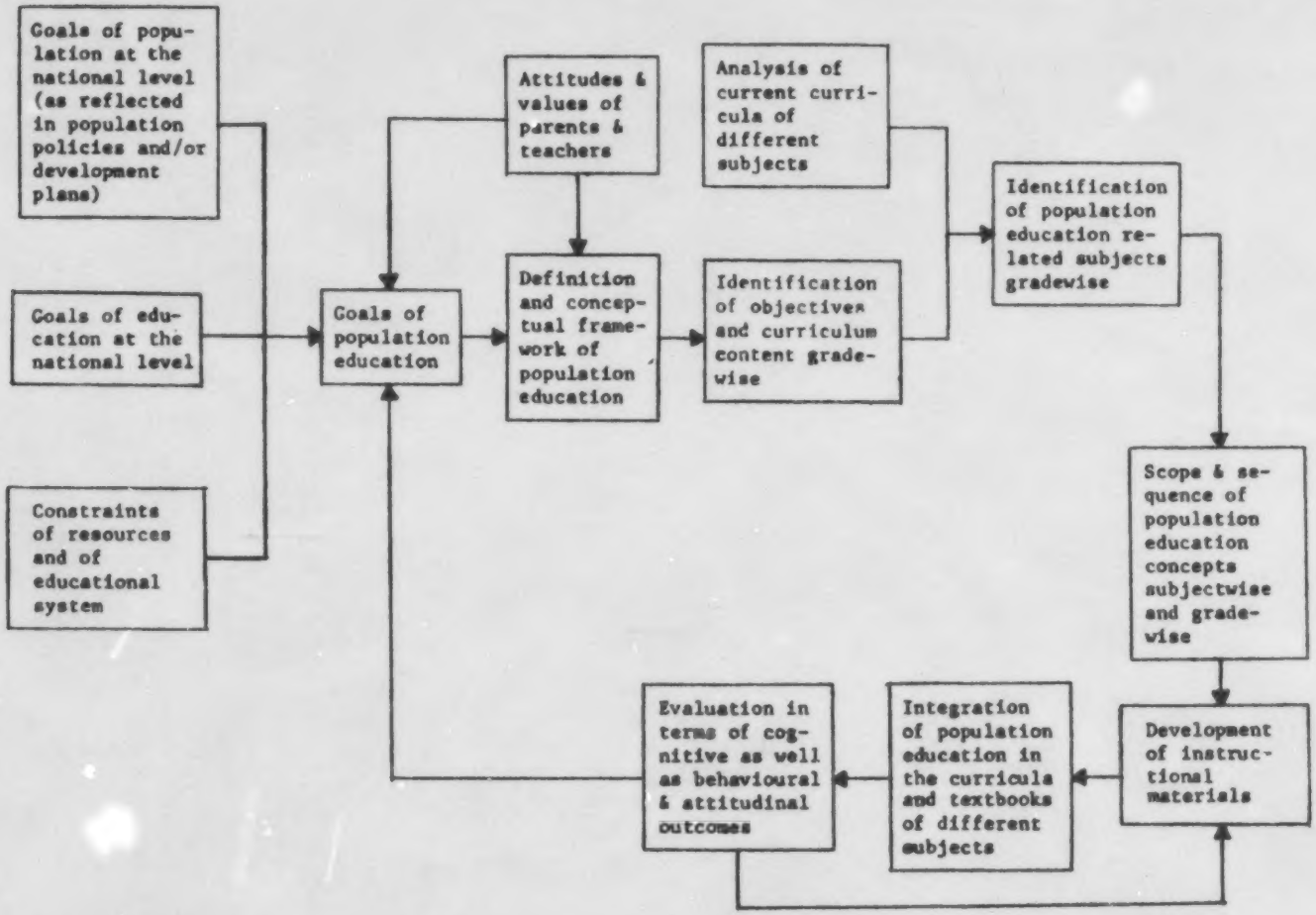
Almost all the countries in Asia having national population education programme have used integration approach and have followed more or less similar design for developing curriculum in population education. It consists of the following main components:

1. Defining Goals of Population Education. The curriculum developers first of all decide upon long-range as well as immediate objectives of population education for each grade in the light of the goals of education, the goals of population at the national level, feasibility constraints and socio-cultural values of the people.

2. Defining Conceptual Framework. The next step is to develop the conceptual structure of population education which means a body of knowledge required for the attainment of its goals. The concepts are organized by grade. The attitudes and values of parents, teachers and students are taken into consideration while developing the conceptual framework.

3. Identifying Population Education Related Subjects for Each Grade. The content analysis of the existing curricula is done to identify subjects at each grade level in which population education concepts can be integrated. The points where population education concepts can be plugged in, are also identified.

MODEL FOR CURRICULUM DEVELOPMENT IN POPULATION EDUCATION USING INTEGRATION APPROACH


Goals of population at the national level (as reflected in population policies and/or development plans)
Goals of education at the national level
Constraints of resources and of educational system
Goals of population education
Attitudes & values of parents & teachers
Definition and conceptual framework of population education
Analysis of current curricula of different subjects
Identification of objectives and curriculum content gradewise
Identification of population education related subjects gradewise
Scope & sequence of population education concepts subjectwise and gradewise
Development of instructional materials
Integration of population education in the curricula and textbooks of different subjects
Evaluation in terms of cognitive as well as behavioural & attitudinal outcomes

4. Developing Scope and Sequence of Population Education Concepts. The population education concepts are sequenced gradewise and subjectwise. This can be done on a bi-dimensional chart.

5. Developing Instructional Materials for Teachers and Students. The instructional materials for teachers and students are developed using different methodologies. As some concepts of population education may be quite sensitive in a particular socio-cultural setting, they should be developed very carefully.

6. Integration of Population Education. In some countries, curriculum and materials of population education get integrated in the existing curricula and textbooks as a part of the on-going curriculum improvement programme. In other cases, it cannot be integrated in until the curricula and textbooks of mother subjects are revised. In such cases supplementary materials are provided to the students and teachers for integration in relevant subjects.

7. Evaluation of Curriculum and Materials. The population education materials integrated in different subject areas should be evaluated to find out whether the desired outcomes in term of cognitive and attitudinal behaviours have been achieved. In the light of evaluation necessary improvements are made in the curriculum and materials of population education.

Analysis of Curricula in Population Education

The curricula in population education in countries with population education programmes have been developed to suit the socio-cultural as well as educational needs of the countries. Although the overall goals of population education at the school level are more or less the same, there are differences in the immediate objectives, content areas, subjects of integration as well as modalities and approaches for materials development. For example, the curricula in population education of Republic of Korea and the Philippines include content relating to sexuality and family planning whereas other countries have avoided to include them because of socio-cultural factors. The following list of major content areas of some countries and a summary of scope and sequence of population education concepts of Republic of Korea will give an idea of the diversities as well as similarities in the population education curricula of different countries.

Country	Major Content Areas
1. Bangladesh	1. Demography. 2. Population situation at national and international lvel. 3. Population growth and economic development. 4. Population growth and social development.

Country	Major Content Areas
	5. Population growth and family life.
	6. Population growth and educational development.
	7. Population growth, food and nutrition.
	8. Population growth and environment.
	9. Population growth and health.
	10. National and international policies related to population.
2. Fiji	Four themes
	1. Families.
	2. Communities.
	3. People.
	4. Family life including human reproduction and family planning.
3. India	1. The population growth.
	2. Economic development and population.
	3. Social development and population.
	4. Health, nutrition and population.
	5. Biological factors - family life and population.
4. Indonesia	1. Basic concepts of demography.
	2. Family size and standard of living.
	3. Social development and population growth.
	4. Ecology and population growth.
5. Republic of Korea	1. Human reproduction and family planning.
	2. Family size and standard of living.
	3. Population and environment.
	4. Population and the economy.
	5. The effecting population phenomenon on human life.
	6. Population policies and progress.

Country	Major Content Areas
6. Malaysia	1. Malaysian population situations and some specific countries. 2. Causes of rapid population growth. 3. Major problems of rapid population growth. 4. Effects of rapid population growth on natural resources, economic and socio-cultural development of Malaysian and some specific countries. 5. Advantages of planned families. 6. Malaysian population programmes and of some specific countries. 7. Dynamics of population growth. 8. Biological aspects relating to population growth. 9. Socio-economic aspects affecting population growth. 10. National and international policies relating to the population issue. (There is separate content areas for the elementary, lower secondary and upper secondary levels)
7. Philippines	1. Demography. 2. Determinants. 3. Consequences. 4. Sexuality. 5. Planning for the future.

* SCOPE AND SEQUENCE OF POPULATION EDUCATION CONCEPTS

Content areas	Generalizations (Grades/Subjects)	Elementary School (1 to 6)	Middle School (7 to 9)	High School (10 to 12)
I. Human reproduction and family planning	I.1 Human reproduction is a natural phenomenon of human life.	S (3)	N (9) H (9)	SC, B, H
	I.2 Physiological development preceeds emotional development.	PE (6)	H (7,9)	SC
	I.3 Fertility behaviour is a kind of interaction between the sexes, and is affected by physical, phychological and social factors.			SC, B, PE
	I.4 The given sex affects in many ways the individuals from the infancy to the adult.	SS (2,6)	N (7)	SC
	I.5 Family planning is an old practice in many cultures.			SC, PE, B, H
	I.6 Family planning is a basic means in population control.	SS (5)	SS (8,9)	G
II. Family size and standards of living	II.1 Standard of living is affected by the relationship between the labour force and the work available.		H (7)	G, P
	II.2 Family size has direct relationship with the economic stability of the family and the extent to which the individual's desires are met.	SS (3,5)	H (7) SS (8,9)	NH, SC, H
	II.3 Culture and customs determine the expected standard of living.	SS (4)	SS (7)	
	II.4 Standard of living has close relationship with the availability of public services.	SS (5)		SC
III. Population and the environment	III.1 Human beings are part of the ecosystem.	N (1,4,6)	N (7,8)	B
	III.2 Man has dominated his environment with his creative intelligence.	N (3,6) SS (4)	N (7)	WH, B, PE
	III.3 The industrial development has added new dimensions to the relations between society and the environment.	N (4) NH (6)	SS (8)	H, SC, PE

* Adapted from KEDI, Curriculum Development for Population Education. Seoul, 1975.

Key
S = Science, B = Biology, SC = Society and Culture
N = Nature, H = Home Economy, G = Geography
SS = Social Studies, PE = Physical Education, NH = Natural History
P = Politics-Economy, WH = World History

Content areas / Grades/Subjects / Generalizations		Elementary School (1 to 6)	Middle School (7 to 9)	High School (10 to 12)
IV. Population and the economy	IV.1 Public services can be made available through the harmonious combination of the people, the institutions and the capital.	SS (2,3,4, 5,6) NH (6)	SS (7,9)	NH, P
	IV.2 Public services tend to lag behind the population changes.	SS (1,4,5, 6) PE (5)	SS (7) PE (9)	SC
	IV.3 Man, for a better life, tends to drifts to the places where goods, services and employment are more readily available.	SS (2,3,4, 5) NH (6)	SS (7,8)	G, NH, WH, SC
	IV.4 Trade and industry develop in the areas where the labour force, resources and transportation are more easily available.	SS (4,5)	SS (7,9)	G, NH, SC
	IV.5 The individual's savings affect investments, industrial development and the nations' economic growth.	SS (3,4,5)		SS, SC, P
	IV.6 Population growth takes a deep "bite" out of the savings required for the nation's economic growth.	SS (3,5)	SS (7)	G, SC, P
	IV.7 High quality of techniques, education, the labour force and leadership are important factors for economic growth	SS (5)	SS (9)	SC, P
	IV.8 Economic growth following industrial development has brought about a considerable decrease in mortality rate as well as decrease in the fertility rate.	NH (6)	SS (7,9)	G, NH, WH, SC, P
V. The effects of population phenomenon on the individual and collective lives	V.1 In order that man lives within the limits of resources on the earth, he must reasonably limit his desires.	SS (4,5)	SS (7,8)	G, P
	V.2 Population congestion exerts direct influence on the quality of the individual and of the society.	SS (3,4,5)	SS (7)	G, WH, SC
	V.3 People living in the highly populated countries face the problems of illiteracy, poverty and disease.	SS (6)	SS (7)	G, SC, P, H
	V.4 Today, population problems have become a global concern, as the development of transportation and communication bring together many nations closer, and the need for economic cooperation increases.	SS (2,5,6)	SS (7)	G, WH, SC
	V.5 The national development has close relationship with the resources available and population size.	SS (4,6)	SS (7)	G, WH

Content areas / Grades/Subjects / Generalizations		Elementary School (1 to 6)	Middle School (7 to 9)	High School (10 to 12)
VI. Population policy and programme	VI.1 The family planning programmes are determined by the nation's population policies.	SS (1,5) NH (5,6)	SS (7,8)	G, SC
	VI.2 Population policy at the national level has long been in effect in many countries.	SS (5) NH (5,6)		NH, WH, P
	VI.3 The social customs and religious values are the important factors which affect national population policies.		SS (8,9)	G, WH, SC, P
	VI.4. Various national policies, other than population policies, affect directly or indirectly population change.	SS (5)	SS (7,8)	G, NH, WH, P
	VI.5 The international organizations and funds have been supporting population programmes of many developing countries.	SS (1,3,5, 6)	SS (7,9)	G, NH, SC, P

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Population Education in Selected School Subjects*

D. 20

For many developing countries in the world rapid population growth is viewed as one of the factors adversely affecting development efforts. This is especially true in Asia and many of the small countries in the Pacific region. Hence, many countries in the region have adopted a population policy which is being implemented by different ministries - labour, health, social welfare, agriculture, education, etc. Population education is the response of the education sector to widespread public concern about population problems and issues.

Curricular Approaches

In most countries, where population education has been introduced for the first time into the curriculum of schools, population education is not offered as a separate discipline. This is a realization of the fact that in most cases the curriculum in elementary, secondary and tertiary levels are already crowded. Population education is therefore invariably introduced as an innovative curricular enrichment - both content - and methodology-wise. Contents drawn from demography, population studies and other population-related subjects are used in enriching existing school disciplines such as health education, home economics, the natural sciences (especially Biology) and social studies (including civics, geography and the other social science based-school disciplines).

To ensure a logical integration and enrichment require two prerequisites, namely full grasps of the different population concepts to integrate, and a thorough knowledge of the content coverage or scope and sequence of the discipline to be enriched or in which to integrate, whereby natural plug-in points in the latter are identified.

There are three main approaches adopted for introducing population education in the region, namely infusion, integration and later, as separate subject. The infusion approach is more of an ad-hoc arrangements whereby population-related examples are substituted in existing materials. Integration on the other hand refers to a more systematic incorporation of relevant population elements into the syllabi, a process whereby specialists in different school disciplines, population education and curriculum development need to work together bearing in mind the need to provide young people and adults with an

* *Prepared in connection with the mission to the South Pacific - 24 November to 22 December 1978.*

awareness of the interrelationship between population change and components of quality of life such as housing, clothing, food and nutrition, health, environment, employment, education and other social services.

In the Philippines and Thailand, population education is now taught as a separate subject in the secondary schools, though only as an elective at the moment. This is in view of the tendency for population education to have a low visibility, if not to lose its identity in the process of integration. And if population education is really that important, why should we allow it to be diluted or lost, which often happens when infusion and integration are the curricular approaches resorted to? There is, therefore, a trend towards instituting a separate course in population education in the secondary and tertiary levels.

In view of the ultimate goal of population education, that of influencing attitude and behaviour related to population-related decisions, the methodologies of teaching most appropriate are those of inquiry and values clarification approaches. 1/

In some countries in the region, the use of these two approaches in teaching population education units integrated in such disciplines as health education, home economics, science and social studies, has gone a long way towards renovating these school subjects.

Briefly discussed below are some examples/experiences in integrating population education in selected school subjects.

Population Education in Home Economics

A Unesco study entitled, "Home Economics Education and Population", revealed among other things the following:

i) That in the recent years, home economics is viewed as "The whole integrated body of knowledge aiming at the quality of life and well-being of the family. This model would include not only skills in housework, cooking and needle-work, but also other skills -- decision-making, problem-solving, managerial skills, and the sharing of responsibilities, among members of the family." This is very much related to population education.

ii) Three countries - the Republic of Korea, the Philippines and Thailand, have already integrated population education into various areas of home economics.

1/ *The Regional Adviser has a separate paper on this, entitled, "Approaches and Methodologies in Population Education".*

iii) Although home economics is essentially family-centred and deals directly with the everyday activities of living, the approaches employed in most Asian countries in this study seldom focus on the family, or use the reality of family resources and problems as a basis for exercises. Practice is very limited due to the inadequacy of facilities, equipment, and funds for purchase of raw materials. Problem-solving is, thus, used in artificial situations rather than realistically concrete situations. Rote learning seems to be dominant at the school level even in the countries which offer Ph.D. programmes in home economics. 2/

The above study suggests how a school subject such as Home Economics could be renovated, content- and methodology-wise. If one examines the curricular component of home economics, one invariably sees five basic conceptual themes namely, food and nutrition, housing and home management, family life education, and child care and development, clothing and textiles.

These conceptual themes have great potential for enrichment of population education concepts. Food and nutrition could normally include such topics as family meals, food budgets, nutrition and health, malnutrition and so on, which are closely related to population education.

Housing and management include topics where population education could quite naturally be plugged in, such as housing needs for the family, health and sanitation, water supply and drainage, family budget - incomes (money, goods, services, human resources), values, standards and goals of the family, in relation to the community and the nation.

Family life education, one of the main conceptual themes in Home Economics could be rightly a course in population education as it covers topics like marriage issues, age at marriage, decision-making concerning where to settle to establish the family, size of the family, family goals related to educating children, plans for middle-aged years when the family begins to be smaller as children get married and insurance for old age or care for the aged.

Child care and development include content like the developmental stages of life from conception until it becomes a baby as well as pre- and post-natal care of both the mother and child. These are certainly population education related.

The fifth conceptual theme, clothing and textile, is also linked to population education being one of man's basic needs. It might be pointed out through a well-planned lesson that in fact it is much harder to clothe a family of ten than a family of four.

2/ *Manee Kuanpoonpol. "Home Economics Education and Population Education." Bangkok: Unesco, ROEAO, 1977.*

Population Education Health Education

An overriding consideration in the treatment of this topic is that investment by nations in the health of their citizens, through health education, would in the long run contribute to national development. This is based on the assumption that human beings, who constitute a nation's population, are not mere consumers but potential producers. The educational message of most lessons in population education and in health education is not to control population growth per se, rather that people should be healthy to contribute maximally to national development rather than a population who are liabilities to the nation. Health is, of course, not only physical but mental and emotional. A lesson to illustrate how population education is woven in health education is quoted below:

1. Opener

How many members of your family go to work or go to school? What are your experiences when several family members are rushing at the same time to leave the house?

Today, let us see how well you can act out some situations wherein members of the family are all in a hurry to go to work or to go to school. Let us see if you can observe the behaviour of the family members being played. Be ready to tell how such behaviour affects the family members.

2. Development

Dramatize or act out the following:

i) It is 6:00 a.m. in the house of the Roma Family. Laura is inside the bathroom. Her father, sister, and her three brothers who are hurrying to leave the house are waiting to use the bathroom.

ii) Mother is through with her morning chores before going to the office. Four of her children approach her for their pocket money, snacks, bags, books, etc. while two younger children are pulling her skirt to call her attention.

After the dramatizing, pupils are led to answer the following:

How did Father, Mother, and the children behave in each situation?

What do you think caused them to behave the way they did?

How did the family members feel?

What family rules which can contribute to good family relations were not followed?

(Since the roles to be played by the pupils are anticipated, additional questions to evaluate the role-playing may be added depending on what the pupils acted out.)

Let us go back and analyze the behaviour of the family members in the role-playing. (Stimulate pupils to answer the following:)

What do you think of Laura taking too much time in the bathroom? Was the behaviour of the family members proper? Did Laura consider the feelings and needs of others? Do you think that a person who is not thoughtful or who is inconsiderate is well-liked? Can he get along with others? What would you call a person who cannot get along with others? (He is not sociable.) In this case, how can Laura contribute to good family relations? Suppose the brothers kept knocking at the door and shouting at the one inside, is their behaviour proper? Why? If there were just a few family members, do you think this problem will arise?

Let us now talk about Mother. What household chores did she finish before she went to work? What may become of Mother if she works too hard and does not get enough rest, sleep, or relaxation? Why do mothers or parents get easily angry or spank their children? (Possible answers: She has too many children to take care of. Maybe she is too tired and lacks sleep. She is worried about family problems. Family members don't help around the house. Sometimes children misbehave, etc.) Will worry, anger, sadness, or disappointment affect emotional and social health? How? Give some family rules which may contribute to harmonious relationship among family members.

Conclusion

What conclusions might be made out of this lesson?

/For the complete lesson, see Population Education Programme, Ministry of Education and Culture, "Teacher's Guide in Population Education for Health Education." Manila, 1975. p. 28-29/

Population and Environmental Education

It is interesting to note that recommendation numbers 21 and 22 of the Fourth Regional Conference of Ministers of Education and Those Responsible for Economic Planning in Asia and Oceania are on population education and environmental education. The recommendations are presented below:

Recommendation 21

The Conference,

Considering that population pressure is impinging on development in the region,

Realizing that more than half of the population of the world, and about three-fourths of the population of Asia, are suffering from poverty, malnutrition and undernutrition,

Recognizing that unplanned population growth has contributed to such dehumanizing conditions,

Recognizing that intervention in many sectors would be required to improve this situation to mitigate the negative impact of population growth within the family, the community and the nation, and that one form that this intervention has taken is population education.

Recognizing that population education complements family planning programmes through the development of critical awareness enabling the individual to make rational decisions about population matters, leading to a better quality of life for the individual, the family and society.

Noting that population education is one of the means to curricular innovation and reform in education,

Recommends to Unesco that, with the support of UNFPA, it continues to co-operate with Member States which have introduced population education programmes in the implementation, development of curricula and materials, research evaluation in population education, in establishing a population education information network and in facilitating the sharing of experiences in population education in the region.

Recommendation 22

The Conference,

Considering that environmental education is a vital component of development and the growth of communities and nations,

Recognizing that environmental education can help bring about:

- awareness and understanding of the total environment and its problems, and sensitivity to them,

- attitudes, feelings and values concerning the environment,

- skills in identifying and solving environmental problems,

- social action in solving environmental problems,

Noting the need to influence all young people and adults whose daily conduct has a decisive influence on the preservation and development of the environment, as well as the solution of environmental problems,

Recalling the important recommendation of the Intergovernmental Conference on Environmental Education organized by Unesco in co-operation with UNEP in Tbilisi, USSR, 14-26 October 1977,

Recommends to Member States that they take steps to introduce environmental education in their formal and non-formal education programmes by creating a unit or study group to:

1. develop a programme for the general public, showing the importance of environmental education;

2. study the problems associated with individual subjects or the integration of environmental concepts into existing disciplines;

3. examine the potential of appropriate institutions for helping to implement environmental education programmes;

4. analyze the extent to which environmental concepts are already embodied in the curriculum and identify existing gaps and "plug in" points;

5. plan and develop curriculum content and methodology in environmental education both in- and out-of-school.

Recommends to Unesco that it undertakes the following action in consultation with the participation of the Member States:

1. define the nature and extent of environmental problems in the context of developing nations in Asia, which could serve as a prototype conceptual framework for environmental education;

2. develop prototype curriculum content and methodology in environmental education as separate disciplines or as integrated into existing disciplines at different grades and school levels;

3. set up a regional programme in support of country programmes in environmental education, and assist Member States in planning, curriculum and materials development and research and evaluation in environmental education.

It should be noted that the two recommendations were consecutively presented, and the plausible implications could be that the Conference viewed it as an inter-related educational programmes. Indeed man thrives on environment, and man does exert tremendous influence on environment. Perhaps one of the best learning units on Population and Environment in Asia is that developed by the Population Education Unit Curriculum Development Centre of Sri Lanka, entitled "Man's Influence on the Resources and the Environment". The general objective of the unit is to help the pupils develop an understanding of:

i) the finite nature of the vital natural resources on the planet;

ii) the fact that with the
   a) increase in population,
   b) improvements in the standard of living, and
   c) advancement of technology the use of natural resources is increasing rapidly;

iii) the fact that the
   a) increase in population,
   b) improvements in the standard of living,
   c) advancement of technology along with
   d) urbanization and over-crowding are causing a deterioration of the environment and this has begun

to tell on human as well as other forms of life. It is likely to become worse in the future; and

iv) the alternatives available to the present generation to avoid a critical situation that could arise as a result of

a) the depletion of natural resources and

b) the deterioration of the quality of the environment,

with a view to make them realize the need for

a) the conservation of natural resources and the prevention of the deterioration of the quality of the environment;

b) each person as an individual and as a member of the community to take every step however insignificant it may appear, to conserve the natural resources and to preserve or improve the quality of the environment.

After a thorough discussion of the topics concerned, an evaluation of learning is done. One such evaluation form is given below:

Evaluation

Have the following chart drawn on a large sheet of paper and pin it up on the chalk board. The chart consists of three columns.

The first column gives the actions of man in his attempt to increase food production.

The second column gives the possible consequences of his actions and the third gives methods of conserving our resources from being destroyed.

Instruct the pupils to look at the chart and note down the matching items in each column.

e.g. item no. 4 in Column I has as its consequence - item no. 1 in Column II. Method of preventing this and conserving the resources is given in item no. 4 of Column III. So the answer could be written as 4 - 1 - 4. Similarly request the students to match the other items in the chart.

EVALUATION

Man's Action	Possible Consequences	Method of Conservation
1. - cutting down forests for agriculture.	1. - water logging salt deposits in soil.	1. - use of pesticides and weedicides.
2. - monoculture	2. - destroys useful organisms	2. - careful choice of land - cultivation of cover crops - contour ploughing - build retaining walls.
3. - use of insecticides weedicides	3. - water pollution by chemicals. - increases growth of pests & weeds	3. - minimize use - soil testing and use of suitable manure
4. - new methods of irrigation.	4. - increases growth of pests & weeds - destroys useful organisms necessary for balance of nature	4. - care and forethought in adopting methods of irrigation to suit nature of land.
5. - use of fertilizers	5. - soil erosion - silting - floods	5. - use of chemicals which are selective in their action - using alternative methods of biological control - rotation of crops.

The answers are: 1 - 5 - 2
2 - 4 - 1
3 - 2 - 5
4 - 1 - 4
5 - 3 - 3

/Source: Population Education Unit, Curriculum Development Centre, Ministry of Education, "Men's Influence on the Resources and Environment", Sri Lanka, 1977./

Population Education in Social Studies

Population education has been integrated in social studies, curriculum of countries in Asia which have population education programmes. To illustrate: in Indonesia population is integrated in civics and geography; in the Republic of Korea, at the middle school level in social studies, while in the high school level, in politics, economy, society, culture and geography; in Malaysia, civics and geography; in the Philippines in social studies; in Sri Lanka in social studies; and in Thailand at the elementary level in the subject "life experiences" and at the high school level in social studies.

It should be noted that in some countries the social sciences have been lumped for instructional purposes into the social studies, whereas in some countries, the social sciences are taught as such, particularly geography.

Demographic data and population studies which provide the bulk of the content of population education are subject to varied and conflicting interpretations by individuals depending upon their value-laden frames of reference. Likewise, the core of any sound social studies programme is cultural values. Social studies deals with people and their cultural values. It is, therefore, easy to enrich social studies with population education. For example, one predominant value in the region is the preference for a son. In many countries, the social value: son preference is regarded as one of the socio-economic factors affecting population change. In some Asian countries, like the Republic of Korea, research findings have shown that especially among the lower classes and among the rural families, greater preference is shown for sons. Among the reasons for such preference are - i) continuity of family name, ii) old age support, iii) economic functions, and iv) religious, in the sense that sons are signs of God's blessings.

A Philippine material dramatically illustrates the strong adherence to this value, as depicted in the story that follows:

Father's Wish [3/]

It's a fine June morning Vicente Santos takes Mila Cruz as his beloved bride. Before the altar they say:

"For better or for worse, for richer or for poorer,
till death do us part".

On their first wedding anniversary they have little Nora. They are very happy although Vicente had hoped for a son.

"Isn't she the cutest baby in the world, Vic?"

3/ The above story was printed in comics form.

"She is! She looks like me that's why", Vic said.

After five years and three daughters, the Santoses are not so happy. Another baby is coming. While Vic was carrying the youngest,...

"What's the matter with the child? She won't stop crying!!!",

"Perhaps she's still hungry. Give her some milk", replied Mila.

One evening, Mila talks to Vic about family planning. She wants to go to the family planning clinic, "Don't you think I should go to the family planning clinic, Vic? Four girls to take care is no joke! But Vic replied, "I want a son! Let us wait. May be the next will be a boy".

So what happens? Mila has another child. Imagine Vic's disappointment - as the nurse at the delivery room announced, "It's a girl".

"Another girl! I give up!, exclaimed Vic.

But then they have already five girls.

/Source: Population Education Programme, Department of Education and Culture, "Teacher's Guide in Population Education for Social Studies", Manila, 1976. p. 14-17/

This lesson illustrates how family size is affected by value son-preference.

In the Philippines about 100 beliefs, practices and songs related to, and affecting fertility have been compiled 4/ to provide the learners knowledge and understanding of the socio-psychological factors behind wanting children and the values, customs, and beliefs regarding family size. These knowledge and understanding will hopefully lead to appropriate changes in attitudes and values consistent with the quest for better life for the family, the community and the nation. Certainly population education and social studies converge beautifully in the area of fertility-related values.

Population Education in Science

Science is another discipline to which population education concepts have been integrated. The lesson below illustrates how population education has been integrated in a Unit on "Living Things", a sub-unit on "The Effects of Overcrowding on Individual Needs" for Grade III. /Only two activities are included here./

4/ *Population Education Programme, Ministry of Education and Culture, "Some Philippine Beliefs and Practices Related to Fertility", Manila, 1976.*

Activity 1

Plan a field trip with the children to a place you have previously visited. It may be the school garden, especially the vegetable plots or a rice field if one is accessible. If it is the school garden, it would be better if there were seedling boxes available for observation, which, by a previous arrangement with the garden teacher or the one in charge of the garden, show seedlings of the same kind (may either be pechay or mongo, or tomatoes, etc.) crowded together and some that have already been thinned out for transplanting. If it is the rice field, have the children observe the seedling plots.

Guide the children to tell what they will look for or observe during the field trip. Ask the following questions:

> What shall we observe in the vegetable garden or in the rice field? Have you seen a seedling box or plot? What is done to the seedlings in the box or plot? Are they allowed to remain in the box or plot? Why or why not? How are the seedlings planted in the plots? Why? Compare the appearance of the same kind of seedlings or palay seedlings that are growing very close to each other with those that are not growing close to each other.

Divide the children into groups. Discuss with them how they will record their observations as a group. The following chart may help them in recording: (The same kind of plant should be compared as to crowded and not crowded. Answer in parentheses for the teacher only.)

Name of Plant	What to Observe	Crowded	Not Crowded
1. mongo	1. Leaves 2. Stem 3. Height of plant	(dry, small, drooping, etc.)	(big, healthy, green, etc.)
2. palay	1. Leaves 2. Stem 3. Height of plant		

Activity 2

Pretend that the space in the classroom is the earth's surface. Mark off two equal areas (four square metres) on the floor. Have two or three pupils get inside one area and ten or more in the other. Ask the pupils:

> Which group can move around easily? Do you have similar experiences at home or elsewhere? Tell the class how you felt in a crowded place. Did you feel comfortable? Why or why not?

In urban areas, children may relate their experiences in a crowded bus, store, market, cinema, restaurant, church, etc.

Alternate Activity

Have a field trip or a picture study of a healthy, spacious neighbourhood and an unhealthy, crowded neighbourhood. Have the pupils compare the two situations.

> What are the advantages/disadvantages of a crowded/not crowded neighbourhood? Which place would be more healthful to live in? Why?

Summing Up

Summarize the ideas taken up in all the activities. Have the pupils list all the basic needs of each of the living things used in the activities. Ask the pupils:

> Do the plants, animals, and people have the same of different needs? Are the individual needs of plants, animals, and people affected by overcrowding? If so, how? Are the effects of overcrowding favourable or unfavourable to the individual? Why?

Lead the children to state the following concepts:

> Too many plants, animals or people in a limited place result in overcrowding.
>
> Plants, animals, or people that are overcrowded do not get enough of what they need.

Here again one can see how population education fit in quite naturally in a science lesson.

/Source: Population Education Programme, Ministry of Education, "Teacher's Guide in Population Education for Elementary Science". Manila, 1976. p. 40-44/

Summary Statement

The paper is an attempt at showing how population education could enrich and renovate different school disciplines, with the ultimate aim in view of making students aware that population is a variable for development, and that this could be done through inquiry and values clarification approaches.

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Approaches and Methodologies in Population Education*

D.21

The title encompasses two vital components of instructional/learning system, namely process and content. Approaches and methodologies are processes, and population education is the content. Process and content are two sides of a coin, you cannot have one without the other. Content, in this case population education concepts needs to be processed. Nowadays, there is so much demographic data and population information, but unless these are processed in the minds of the learners, they are of little value.

Process in this paper is viewed in two levels, approach and method. Approach is here operationally defined as a pattern for curricular integration, while method, as a teaching-learning strategy.

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* A paper presented to the Group Training Course on Population Education, held at the UNESCO Regional Office, Bangkok, on 26 September to 14 October 1977. Revised in October 1979.

Methodologies in Population Education

In discussing approaches and methodologies, one cannot overlook other important components of any instructional system. Objectives, content, materials, approach, methodology and evaluation must be congruent and supportive of each other in any given set of lessons.

In describing approaches and methodologies, recent developments in formulation of objectives and evaluation strategies should be borne in mind. Among recent trends in objectives include those of stating objectives in behavioural objectives. Likewise, evaluation is no longer focused on lower-level thinking, as exemplified in recall and recognition types of test items; but more and more on higher-level thinking, which is consistent with the inquiry method. More important, perhaps, is the trend towards evaluating attitudes, values and behavioural intents.

APPROACH

Two categories of approaches are discussed in this article: namely (1) the system of integration or infusion versus that of a separate discipline, and (2) a conceptual approach.

Integration Versus Separate Discipline

Invariably, as population education is first introduced in the curriculum of the formal school system, integration or infusion of population education is resorted to, rather than creating a new subject. This is largely because most school curricula are already crowded. There is a slight difference between integration and infusion. The Malaysian Population Education Programme aptly puts the distinction as follows:

> Infusion may be described either as the substitution of examples into already existing materials illustrate a new point or a new approach adopted in the teaching of population related topics in existing syllabi. Through substitution of examples, the education content remains the same, only the substance of the example has changed.... Another way to introducing population education into the school syllabi is through integration which is the incorporation of relevant population elements into the new syllabi.[1]

The process of integration both in the in-school subjects and various development programmes for the out-of-school youth and adults is discussed at length in two other papers of this author, namely;

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1. Malaysia. Curriculum Development Centre. Population education for Malaysian schools - a position paper. Kuala Lumpur, 1977, p. 14, 15.

i) "Population Education in Selected School Subjects", and ii) "Integration of Population Education in Development Programmes for Out-of-School Youth and Adults".

In the 1978 Regional Consultative Seminar on Future Directions of Population Education, a serious problem attendant to integration surfaced. The report of the seminar states:

> "The problem of integration of population education concepts in different subject disciplines has been commonly felt. Curriculum and materials developed by the population education projects in some countries using conceptual and sequential approach to curriculum development lose their identity and focus when integrated in the subject disciplines. What and how population education content should be introduced at each grade level is ultimately decided by the subject curriculum specialists who sometimes overlook and diffuse the whole objective and emphasis of population education."

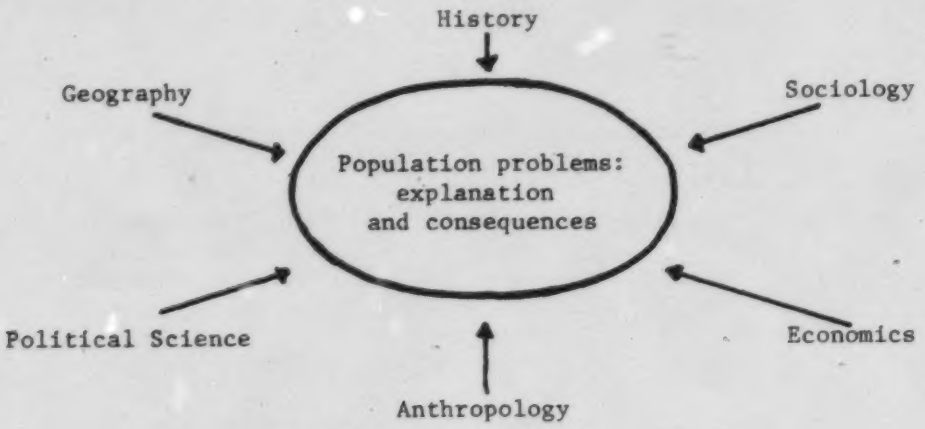
Some countries in Asia have tried to obviate this problem emerging from integration by having a separate subject in population education. In the Philippines and Thailand, an optional/elective subject is now offered on the upper secondary school level. This does not take the place of integration; rather the separate course in population education is designed to complement learning of population concepts acquired through integration and infusion. The separate subject, likewise, serves as a means for consolidating seemingly isolated and scattered population knowledges acquired in connection with different school subjects to which population education content has been integrated.

The Conceptual Approach

The approach to which considerable attention has been devoted to in recent years in many countries is the conceptual approach. The basic philosophy of the conceptual approach was aptly described by Barry Beyer and Anthony Penna when they say that the process of conceptualizing "is something only the conceptualizer - a learner can do. It cannot be done to him or for him. Conceptualizing is not memorizing what someone else thinks a specific concept is, nor is it trying to guess what a teacher or scholar is thinking. Conceptualizing means examining and reflecting on similar experiences in order to build an orderly image of them".

There seems to be a lot of materials already done in integration and/or teaching population education in the elementary and secondary school levels. Maybe the new focus should be on instructional materials for would-be teachers and teachers in the service, both in the formal and non-formal sectors. And if the conceptual approach is to be used in preparing materials for pre- and in-service teacher education in particular, or the tertiary level in general, then one necessarily starts with a conceptual framework. A few years back this author started what he called the multi-disciplinary approach

in his attempts to evolve a crude conceptual framework for understanding and explaining rapid population growth (which pessimists call explosion). The basic assumption is that one might be able to understand the population problem better, if he views the problem through the lenses of the social scientists. Hence, the diagram below:



Historical exploration. In many Roman Catholic countries, the rate of population growth is quite high. This is true in South and Central America (rate of growth in 1978 is estimated at 2.7 per cent) and the Philippines (rate of growth in 1975 estimated at 2.8 per cent). How these countries embraced such religion is part of history - mostly through long periods of colonization by a Roman Catholic country. In many of these countries, the rhythm method is theoretically the only birth control method sanctioned by the church. Many Muslim countries have likewise been pro-natalist.

Sociological explanations. Fatalistic, rather than manipulative values are dominant in many parts of Asia. Hence, the population related attitude is, "God's will be done". If God causes a couple to have many children, God will provide.

Shame, too, is a potent force for population explosion. It is believed that many people still feel ashamed to be seen buying birth control pills, condoms and other contraceptive devices. It is still very shameful for a woman to go to a family planning clinic or to submit for IUD, especially if the physician is a male. The modesty of Asian women considers it improper for a male physician to violate the sanctity of their femininity.

Then, in view of close family ties, one does not need to really worry if a young couple cannot provide for their children with even the barest necessities of life, because grandfather and grandmother and other well-to-do relatives are always there to help out.

It is said that many Asians are education-conscious. Many parents would sell their last carabao (water-baffalo) or cow, if only to send their children for higher schooling. This is because of their

dream to enable their offsprings to move upward socially. But the opportunity for higher education (assuming everything equal) tends to be inversely proportional to the number of children, especially in countries where secondary and higher education are not subsidized by the Government.

The children of a poor farmer appear to be twice cursed, in that the parents cannot send them to obtain higher quality education, and yet, the farm is too small for all the children to earn a decent livelihood on. This then constitutes a "push" factor, (from the rural to urban areas) because of the incapacity of the land to withstand further sub-division or more intensive economic use. The children, therefore, are pushed to the big cities. They believed that the big cities could provide them better employment opportunities. But then a study co-sponsored by the Family Planning Association of the Philippines and Colombo Plan shows that the educational level of attainment is positively correlated with employment status and income. These findings could be true in many developing countries. Since the children of the poor farmers do not have secondary and high education, one wonders what fate awaits them in the city?

Economic explanation. In many rural areas, people tend to consider children as economic assets. Children help augment the meagre family income. The point of diminishing returns of the land, though, is overlooked.

The Malthusian Theory is not new to us. It has been existing since the early 1800. It states that the means of subsistence - the production of food in particular - increases at an arithmetic rate while population tends to grow at geometric rates. While it is true that Malthus under-estimated mankind's capacity to develop new technology to increase food production, distribution and supply, we cannot totally ignore the message of the Malthusian Theory. The inflationary tendencies in the world could be attributed to inadequate production of goods relative to demand; not only that human want is increasing, but because of the explosive increase in demands.

Anthropological explanation. Perhaps one explanation for population explosion is the existence of antiquated customs and traditions. For example, one important expectation of the extended family is for the couple to have a number of children. It is not unusual in many developing countries to hear remarks like, "Why don't you have a child yet" if pregnancy does not take place after a year of marriage. And the man is believed to lack virility if his first child is not followed by another year after year.

Anthropologists who subscribe to functionalism view marriage as an institution with a legitimate function. It might be viewed as follows:

M A R R I A G E

The Charter

Basic values - such as

(1) You have not repaid your parents, until you have your own children

(2) Strong family ties

Personnel

The couple

The children

Norms

Social norms
Extended family, conducive to big families.

Political norm
Father - head of the family. The bigger the family, the more political power he wields.

Economic norm
Father is the principal bread-winner. He can work as hard to meet his family's demand for the basic necessities of life.

Material Apparatus

Home

Activities

Social activities - more children, bigger web of relations.

Political activities - during election, the bigger the clan, the more chances of winning.

Economic activities - nepotism, the more relatives in high offices, the better chances of getting a good job.

Religious activities - baptism, a ritual that widens the social relationships of the family.

Educational activities - The first teachers are the parents.

Recreational activities - children source of joy.

Etc.

Function

(Marriage and family has a function, of which raising many children is one.)

Political science explanation. In many Asian countries, people are allowed to marry as early as age 16 and 18 for females and males, respectively. In some cases the minimum age limit set by law is not even followed. Some manage to marry even younger than the already low age requirements for marriage. This results in a longer span of fertility period within matrimony, hence the likelihood of having more children.

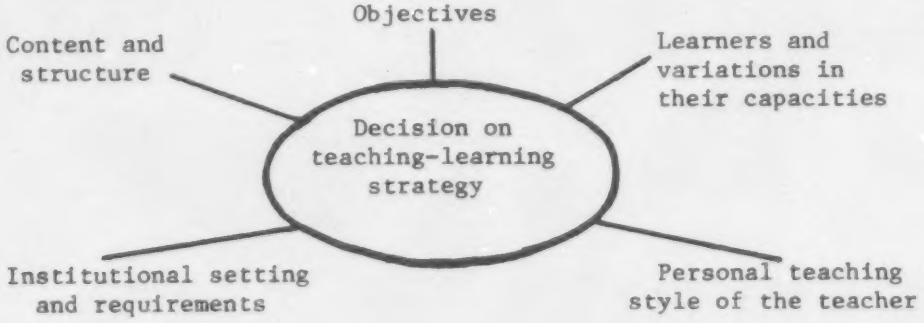
Geographic explanation. To date, studies and literature paint a gloomy picture of the adverse effects of unplanned population growth on environment. But these are merely isolated studies to show that environment is a factor for population explosion. One such study shows that women in a region in the Philippines (Bicol) are more fertile than women in another region (Ilocos). The explanation being that Bicol is a region with abundant agricultural resources and favourable climate, while Ilocos has but a narrow strip of coastal plains and that there is a short rainy season. People in the latter, therefore, think twice before having big families, whereas in the former, there is really nothing to worry about, as the means of livelihood is plentiful.

A Multi-disciplinary Oriented Population Education Course

The above conceptual framework pre-supposes that aside from integrating population concepts in each of the social science disciplines, one may in fact have a separate course in population education. It can be multi-disciplinary, drawing from the bountiful fountain of scholarship from each of the social sciences. The course could extensively utilize the analytical tools of each of the social sciences in wrestling with population problems.

Methodology

After one has decided on the curricular structuring, one then decides on what teaching-learning methods to use. In deciding what method to use, one has to consider several factors such as those shown in the diagram below:


Objectives
Content and structure
Learners and variations in their capacities
Decision on teaching-learning strategy
Institutional setting and requirements
Personal teaching style of the teacher

What is the end in view of the lesson? Is it cognitive? If cognitive, is it only on the awareness or memory level learning of population data? If so, then one can perhaps resort to lecturing on some population data and concepts. Or is the purpose of the population unit also to develop the ability to think about issues in population related topics? If so then an inquiry-oriented strategy appears to be more appropriate. But then is there learning when no attitude and behaviour changes occur? If one is concerned about this, then affective objectives must be pursued. Affective objectives are perhaps better attained through the values clarification strategy.

Learners vary - some are made of gold, some silver and some brass. How they learn would vary a lot. Perhaps bright learners can easily cope with inquiry oriented strategies, but with the slow learners one might have to use more of gaming, simulation and role-playing.

The personality of the teacher cannot be overlooked in deciding what strategy to recommend. Those with an autocratic and domineering outlook may find it difficult to be effective facilitators in inquiry-oriented and values clarification strategies.

Teachers, either both in-school and out-of-school, take into consideration the institutional setting in deciding as to what strategy to use. More important perhaps than determining the population content to be taught is determining what method to use. If the study of population concepts has been integrated into anthropology, sociology, history, political science, psychology, geography and economics, then one should adapt the appropriate methodology used by each of those disciplines.

The decision on what method to use is, therefore, a complicated matter. In a sense the teacher may be likened to a basketball coach. In enabling his team to win, he has to discover the harmonious combination early in the game. What makes the job of the teacher even more difficult is the absence of a theory of instruction. A theory of instruction should enable us to describe, explain and predict what technique is going to work given the kind of learners, teacher's personality, objectives, content and institutional setting.

Discovery-oriented Vis-a-Vis Expository Teaching Strategies

This paper would not be useful at all if the expository approach is elaborated upon. We all know that very well. Many of us were somehow taught the expository way. However, for purposes of highlighting the difference between the discovery-oriented and the expository approach, allow me to present two diagrams which compare the two approaches as envisioned by Massialas and Sprague.

FIGURE 1
TRADITIONAL MODEL

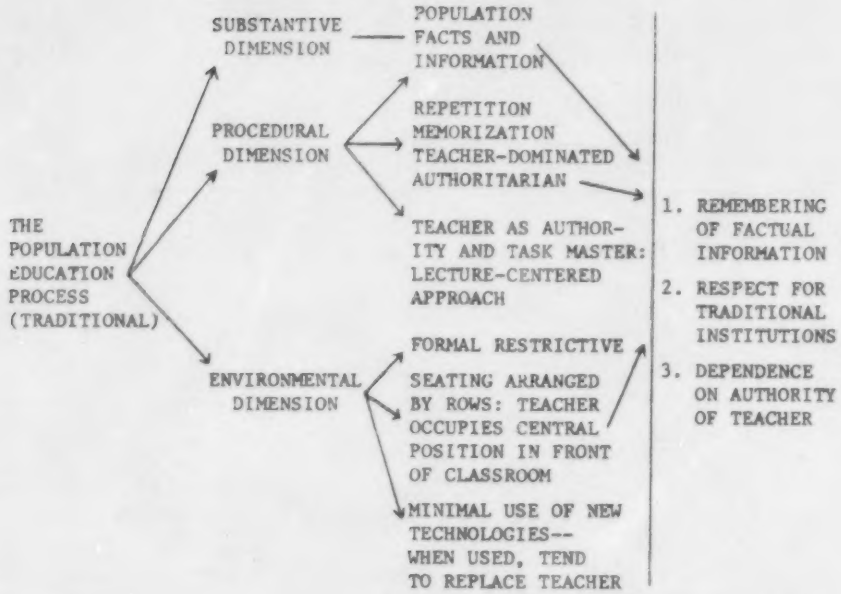
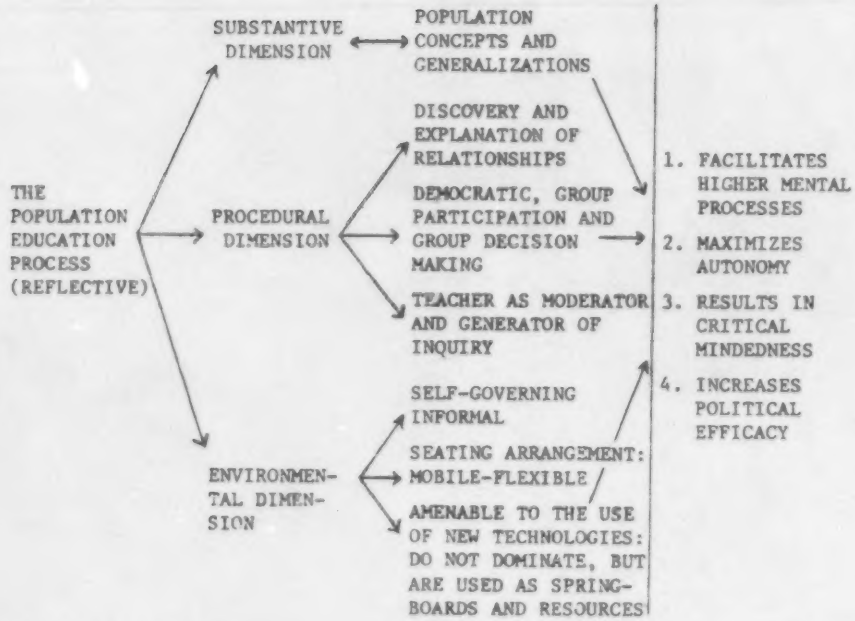

THE POPULATION EDUCATION PROCESS (TRADITIONAL)
SUBSTANTIVE DIMENSION
POPULATION FACTS AND INFORMATION
PROCEDURAL DIMENSION
REPETITION MEMORIZATION TEACHER-DOMINATED AUTHORITARIAN
TEACHER AS AUTHORITY AND TASK MASTER: LECTURE-CENTERED APPROACH
ENVIRONMENTAL DIMENSION
FORMAL RESTRICTIVE
SEATING ARRANGED BY ROWS: TEACHER OCCUPIES CENTRAL POSITION IN FRONT OF CLASSROOM
MINIMAL USE OF NEW TECHNOLOGIES-- WHEN USED, TEND TO REPLACE TEACHER
1. REMEMBERING OF FACTUAL INFORMATION
2. RESPECT FOR TRADITIONAL INSTITUTIONS
3. DEPENDENCE ON AUTHORITY OF TEACHER

FIGURE 2
INQUIRY MODEL


THE POPULATION EDUCATION PROCESS (REFLECTIVE)
SUBSTANTIVE DIMENSION
POPULATION CONCEPTS AND GENERALIZATIONS
PROCEDURAL DIMENSION
DISCOVERY AND EXPLANATION OF RELATIONSHIPS
DEMOCRATIC, GROUP PARTICIPATION AND GROUP DECISION MAKING
TEACHER AS MODERATOR AND GENERATOR OF INQUIRY
ENVIRONMENTAL DIMENSION
SELF-GOVERNING INFORMAL
SEATING ARRANGEMENT: MOBILE-FLEXIBLE
AMENABLE TO THE USE OF NEW TECHNOLOGIES: DO NOT DOMINATE, BUT ARE USED AS SPRINGBOARDS AND RESOURCES
1. FACILITATES HIGHER MENTAL PROCESSES
2. MAXIMIZES AUTONOMY
3. RESULTS IN CRITICAL MINDEDNESS
4. INCREASES POLITICAL EFFICACY

While these models have been originally used in social studies, it is equally applicable to population education: (Only the substantive dimension has been changed in this adaptation of the model). The models are self-explanatory.

Since 1972, there has been a lot of talk about an actual use of the discovery-oriented or inquiry approach in teaching population education. However, there is no evidence that the discovery-oriented approach is indeed better than the expository approach. Besides, when we speak of comparative effectiveness, effective in what sense? As an off-shot of a Research Utilization Seminar in the Philippines in 1975, this author was commissioned to undertake a pilot study in this area. The research problem was - Which of the two approaches - discovery or expository - is more effective with regards to the following:

1. Acquisition of population information and concepts.

2. Retention of population information and concepts over time.

3. Development of thinking skills; and

4. Development of desirable population attitudes.

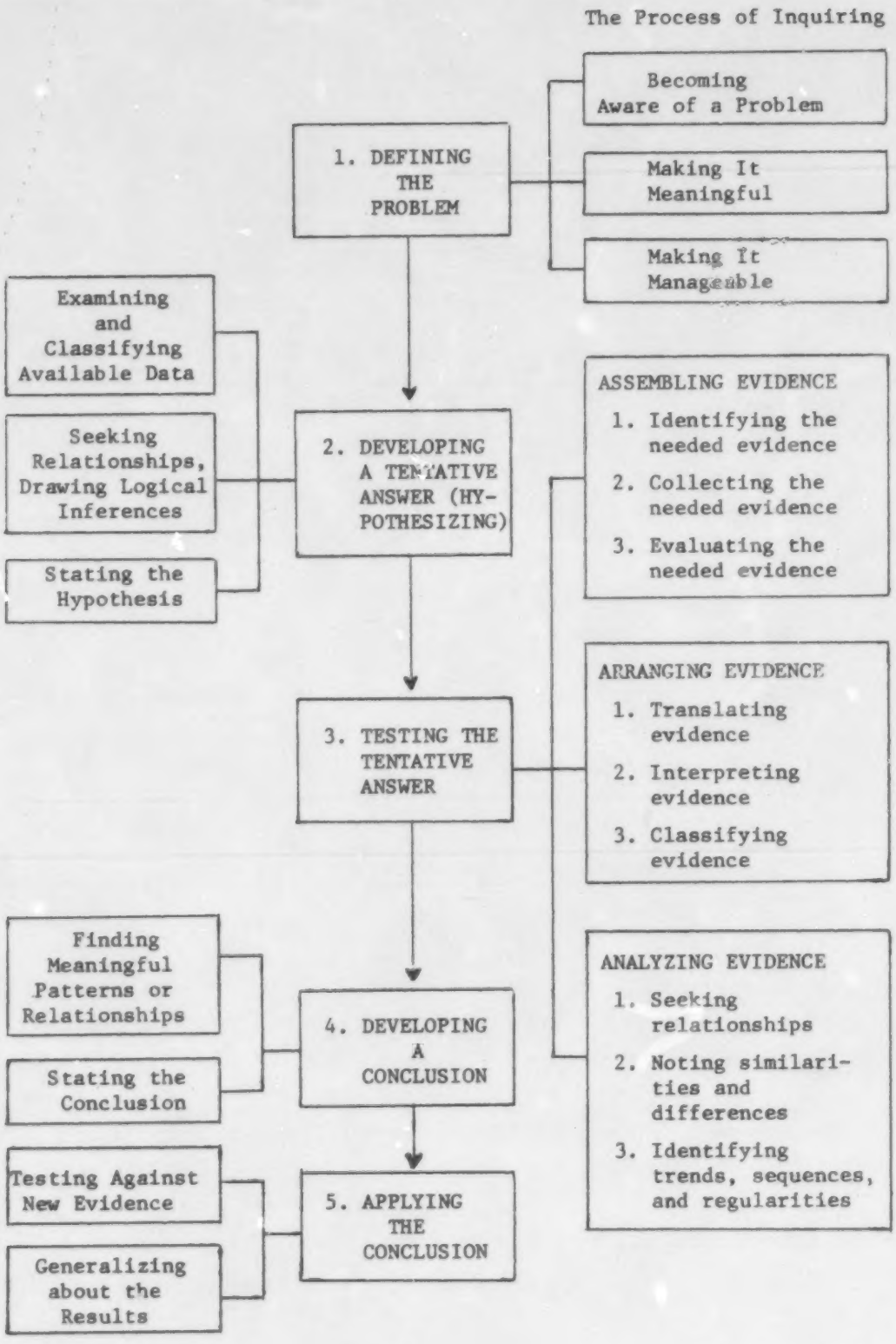
The quasi-exerimental technique was used in the study. Three sets of comparable classes were used from four secondary schools, involving about 656 students.

1. The discovery approach is as effective as the expository approach, as a teaching strategy in regard to the acquisition of population information and concepts.

2. The discovery approach is generally better than the expository approach in terms of: a) the retention of population information and concepts over time; b) the development of thinking skills; and c) the development of desirable population related attitudes.

Three other studies done under the guidance of the author yielded the same general conclusions.

The teaching model used for the discovery-oriented approach in the above-mentioned study is patterned after that of Barry K. Beyer which is illustrated as follows:


The Process of Inquiring
1. DEFINING THE PROBLEM
Becoming Aware of a Problem
Making It Meaningful
Making It Manageable
2. DEVELOPING A TENTATIVE ANSWER (HYPOTHESIZING)
Examining and Classifying Available Data
Seeking Relationships, Drawing Logical Inferences
Stating the Hypothesis
3. TESTING THE TENTATIVE ANSWER
ASSEMBLING EVIDENCE
1. Identifying the needed evidence
2. Collecting the needed evidence
3. Evaluating the needed evidence
ARRANGING EVIDENCE
1. Translating evidence
2. Interpreting evidence
3. Classifying evidence
ANALYZING EVIDENCE
1. Seeking relationships
2. Noting similarities and differences
3. Identifying trends, sequences, and regularities
4. DEVELOPING A CONCLUSION
Finding Meaningful Patterns or Relationships
Stating the Conclusion
5. APPLYING THE CONCLUSION
Testing Against New Evidence
Generalizing about the Results

The inquiry-oriented lesson plan used for one of the units is shown in Appendix A.

The question that teachers often ask is - "Does inquiry or discovery-oriented teaching always take the problem-solving pattern, following the model above?" Ideally yes, however, it does not mean that no inquiry teaching/learning occurs if the above locked-step procedure is not followed. The important thing is that there are data or content, that learners are made to think about such content and that a conclusion, if not generalization, is arrived at. Such conclusion/generalization, hopefully, would lead to appropriate changes in attitude, and the attitude changes eventually translated into appropriate behaviour. A crude check-list to this effect is suggested by Sydney Lester, as shown below:

	1	2	3	4	5
Content: Population data	X	X	X	X	X
Dissonance: Thought processes		X	X	X	X
Organization: Conclusion/generalization			X	X	X
Attitude change				X	X
Behaviour change					X

If situation number 5 materializes in the teaching-learning process, then you can console yourself with the thought that you have done justice to your job.

Conclusion

It is not easy, for one to succeed in teaching - one must have the patience of Job, the wills of Michiavelli, the wisdom of Solomon and the charms of Cleopatra, especially when teaching about a value laden subject matter such as population education.

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1. Barry K. Beyer, Inquiry in Social Studies Classroom: A Strategy for Teaching. Colombus, Ohio, Charles E. Merril Publishing Co., 1971. p. 50.

2. Curriculum Development Centre, Ministry of Education, Malaysia. Population Programmes in Malaysia. 1979.

3. G. Sydney Lester, "A New Theory of Instruction for Teachers of the New Social Studies". Social Science Record. New York State Council for Social Studies, 1971.

4. Byron G. Massialas and Nancy F. Sprague, "Teaching Social Issues as Inquiry: A Clarification" Social Education. January, 1974.

5. Hilda Taba, A Teachers' Handbook for Elementary Social Studies. Palo Alto: Addison-Wesley Publishing Co., 1967. p. 57.

Appendix A

An Inquiry-oriented Teaching Unit on Population Growth and Economic Progress

I. Objectives

A. General: To make the students realize that economic progress is affected by population growth.

B. Specific:

1. Cognitive: At the end of this unit, students will be able to

a) acquire facts, concepts, and generalizations related to population growth and economic growth and development;

b) recognize the relationship between population growth and economic development;

c) apply concepts and principles about population growth and economic development to new situations;

d) analyze data about population growth and economic development by recognizing unstated assumptions, distinguishing facts from opinions, and evaluating relevancy of data;

e) synthesize population data into population concepts, and concepts into generalizations about population growth and economic development.

2. Affective: After the discussion of the unit the student will:

a) manifest desirable social attitudes relevant to population problem;

b) show concern about family size and the problem brought about by population growth by
- advocating population control
- resolving to involve the family in the population programme of the community.

II. Conceptual Framework

Concept: Resources

Generalization: The economic progress of a community is affected by population growth.

Sub-concept	Sub-generalization
1. Population Growth a) Birth rate/Death rate b) Age Structure	1. a) Birth rate and death rate affect the population growth of the community. b) Population growth affects age structure. c) Age structure affects burden of dependency in a population.
2. Economic Progress a) Factors for economic progress (Land + capital + Manpower) b) Per capita income c) Standard of living and economic growth	2. a) Dependency burden affects factors which bring about economic progress to the family and the community. b) Rapid population growth affects per capita income of a community. c) The per capita income affects the standard of living in a community and hence, affects its economic growth.

III. General Strategy of Instruction: Discovery-oriented Group

The group should be afforded ample opportunitites to think for themselves through such means as observing, describing, explaining, developing concepts, differentiating, defining, hypothesizing, comparing and contrasting, generalizing, predicting and offering alternatives.

The specific inquiry or discovery-oriented strategy recommended is described below:

A. Defining the Problem

The students are made aware of the problem about increasing population growth and its effects on economic progress with the help of some statistical data, charts, pictures, etc. Not only are they made aware of the problem, but that the problem concerns them. Many questions/problems may be raised but the teacher is expected to guide the students into raising questions/problems that are manageable considering their ability, materials and time available.

The song "People Who Need People", is suggested as a springboard. This can be followed up by the student reading the following:

PEOPLE, PEOPLE -- WHO NEEDS PEOPLE?

One hundred seventy eight years ago, Thomas Malthus, an English thinker, predicted a catastrophe on earth. His prediction is similar to what the film "Soylent Green" showed -- where people ate bread made of human flesh, bones, and blood, because of the inadequacy of food to a fast growing population.

In his "Essay on the Principle of Population (1798)", Malthus wrote that population always increases faster than food supply. As a result, mankind is always threatened with starvation. He warned that unless people learn to keep down the size of their families, poverty will remain and starvation will increase. Rapid population growth is the real cause of poverty among nations, he declared.

At first, other thinkers and leaders just laughed at him. They dismissed his theory, saying that poor man Malthus forgot that man could conquer poverty and could prevent starvation through the use of technology and improved production. But quite recently, scholars have begun to rethink about what Malthus has declared. Many governments have begun to devise ways and means of controlling people from increasing their family size and prevent rapid population growth.

However, there are people who still do not agree with him. They argued that rapid population growth is not the cause of poverty nor the obstacle for countries to achieve progress. They blamed other factors.

The debate still goes on. In our community people differ in their views about the relationship between population growth and progress. As the poem below says--

People today talk about people
Some people say we need more people
Others say we need less people
"Power and Progress" are what some people
  expect with more and more people
"Power and Progress" are what the other
  people expect with less and less people
If you ask me which view is correct about
  people
I think I'll ask first from more and more
  people.

Among the questions/problems that the student might be anticipated to raise are:

1. How does birth rate and death rate affect the population growth of a community?

2. How does population growth affect age structure?

3. How does age structure affect economic progress?

4. How is dependency burden affected by population growth?

5. How does dependency burden affect economic progress?

6. How does population growth affect per capita income?

7. How does per capita income affect standard of living and economic progress?

B. Hypothesizing

The students are made to examine and classify available data. They are motivated to find out which data may serve as leads to the solutions of each problem listed on IIIA. This will involve some seeking of relationships and drawing logical inferences. But more important the students must be able to state hypothesis for each of the problems, such as:

1. If birth in the Philippines exceeds death, then population growth occurs.

2. If population grows faster, then a community tends to have a young population.

3. If a community has a young population, then it tends not to progress faster.

4. If a population grows faster, then the burden of dependency ratio tends to be higher.

5. A community with a high depending ratio, tends to be a hindrance to economic progress.

6. If the population of a community increases rapidly, then per capita income tends to be low.

7. If per capita income is low, then standard of living tends to be low and economic progress slower.

C. Data Gathering

Three important tasks are involved in data gathering namely 1) translating evidence to a language or forms (graphs, charts, etc.) that the class will easily understand. The data gathered

need to be interpreted. Then they can classify the data, such as whether they are confirming or disconfirming the hypotheses.

Among the materials that may be supplied to students are:

1. Material Resources:

   a) Statistical data about two communities
      Data A - Showing rapid population growth including age-sex distribution or dominant age group.
      Data B - Showing slow population growth including age-sex distribution or dominant age group.

   b) Conflicting views on population control
      View A - The need to control population growth. When a baby is born, the mouth is seen as an additional consumer.
      View B - There is no need to control population growth. When a baby is born, one sees the hands as potential producer.

2. Some teaching techniques suggested are:

   a) Review concept of progress and resources through pictures
      i) What manifestations of community progress are illustrated in the picture? (Picture)
      ii) A progressive community must have the things shown in the picture. Explain why? (Picture)
      iii) Which of these workers do you think are found in a progressive community? Why? In a backward community? Why? (Picture)

   b) Present the statistical tables about two communities:

      "Tables and numbers do also tell about the progress of a community. Can you explain what the data in the tables mean?"

      "Which of the two communities do you think is more progressive? Why? Explain the reason for your answer."

      "The teacher may ask question to elicit responses about the implications of a young population on the economic development of a community, if students failed to raise such questions."

   c) "Let's see what other people say about progress and the size of the population".

      Present the two conflicting views. Have them read each. "Which of these views do you think is correct? Explain your answer."

It is suggested that the materials in the package (prepared for this lesson) be made available to the students to read, analyze, criticize, explain, compare and contrast, generalize from, make bases for prediction and in general be springboard for the development of thinking skills.

It is hoped that the materials will be bases for attitude formation and/or change on the desired directions, that is for students to show concern about family size and the problem brought about by population growth.

Among the materials in this package (which are not attached here) are:

1. Preparing Tomorrow's Progress Today
2. Arturo R. Tanco, Jr., "The Country's Resources and Population"
3. Renato G. Litonjua, "Cheaper by the Dozen"
4. Reuben Mondejar, "In Defense of Population Growth"
5. "Twin Views"
6. "People, People -- Who Needs People"
7. "The Population Crisis"
8. "DSW 'Balik Probinsiya' Report Out"
9. "The Family of Four"
10. "The Bautista Family"
11. "An Evening with the Dimagiba Family"
12. "A Look at an Indian Village"
13. "Family Size and Family's Economic Welfare"
14. "Sapang Palay Now Congested, Residents Say"
15. "Population Up, Food Out Put Down"
16. "The Effects of High Fertility on the Economic Development of Capiz and Antique" (Provinces in the Philippines).

Charts, Tables, Figures, Pictures

1. Mabuhay na Maginhawa; Magplano ng Pamilya (Picture)
2. Dependency Ratio (Drawing)
3. Population Age Structure (Figures)
4. Measuring Population Growth (Chart)
5. Population Ranked According to Population: 1970 (Chart)
6. Data About Antique (Table)
7. Province of Antique: Age-sex Composition of the Urban and Rural Population: 1970 (Chart)
8. Province of Capiz: Age-sex Composition of the Urban and Rural Population: 1970 (Chart)
9. Hectares of Land Per Person 1951-2000: Antique (Drawing)
10. Hectares of Land Per Person 1951-2000: Capiz (Drawing)
11. Province of Antique: Percentage of Experienced Workers 10 years of Age and Over by Major Occupational Classifications: 1970

12. Province of Capiz: Percentage of Experienced Workers 10 years of Age and Over by Major Occupational Classifications: 1970
13. Population Projections for Each Province, City and Municipality by Single Year Interval: 1970-1980.

D. Developing a Conclusion

Each of the hypotheses are tested by the factual information from the readings, materials, charts, tables, pictures, graphs, etc.

Meaningful relationships of data revolving around hypotheses, which served as guide for the search for data, are sought. The anticipated conclusions or sub-generalizations are as follows:

1. Birth and death rate affect the population growth of the community.

2. Population growth affects age structure.

3. Age structure affects the burden of dependency in a population.

4. Dependency burden affects factors which bring about economic progress to family and the community.

5. Rapid population growth affects per capita income of a community.

6. The per capita income affects the standards of living in a community and hence affects its economic growth.

All these can be synthesized in one generalization: "The economic progress of a community is affected by population growth".

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Ethical Issues in Population Education: Topics for Values Clarification*

D. 22

If one examines how different countries with population education programme defines population education, no two countries have adopted exactly the same definition. And rightly so, for population education is not value free, and since different societies or countries have diverse value systems, then how each society conceptualizes population education would vary. The political and social context as well as the cultural values of the society tend to affect the nature, role and goal of its population education programme. Population education, like education itself is value-laden. Value, here, is simply defined as an idea - a concept - about what someone think is important and worthwhile (worth having, worth doing, or worth trying to obtain) (Fraenkel). It has two main components ethics and aesthetics. In this paper only the ethical component of value related to population education will be dealt with at length. The paper takes the position that whoever gets involved in population education cannot escape getting entangled with ethical issues, for population education minus ethical issues could be merely demography. Ethics refers to what is right or wrong. This paper recognizes that ethics is deeply rooted into the values of society. There are many crucial ethical issues in population education because each issue involves values that conflict with one another. And we cannot and should not do away with values for that is perhaps the most important attribute that distinguishes man from other animals.

Freedom: An Ethical Issue

One ethical issue in population education is related to freedom. One camp believes that freedom to procreate, i.e. to have any number of children is a basic human freedom. The Declaration of the 1968 United Nations International Conference on Human Rights guarantees this. It states that "....couples have a basic human right to decide freely and responsibly on the number and spacing of their children and the right to adequate education and information in this respect". However, freedom to have children has to be viewed in terms of freedom to enjoy quality of life. A World Bank survey estimates that with the total population of about 4,000 million in 1975, 570 million are undernourished, 800 million adults are illiterate, 250 million children are not enrolled in school, 1,500 million children with no access to effective medical care, 1,300 million with less than US$90.00 income

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per year, 1,700 million with life expectancy below 60 years, and 1,030 million with inadequate housing. Hence, another camp takes the value position that freedom to have as many children that one wants will limit man's freedom for space for agriculture, employment and recreational facilities. This camp contends that explosive population growth would mean limitation of mankind's freedom from noise, congestion and environmental deterioration (Veatch).

Economic Development: An Ethical Issue

Different groups may view population data according to their own biases, thus giving rise to ethical issues. Take the case of the informational data that country A has an average family size of 5. Two different groups from the same country might look at such data from two different perspectives as high economic cost vis-a-vis assurance of economic assistance.

In the Asian context, in many communities, children are considered assets, especially in agricultural communities that are characterized by primitive labour - intensive means of cultivation. In many cottage industries, children provide extra income to the family. Likewise, old-age insurance is hardly available in many Asian countries, hence the reliance on children as security for old age. Many argues that when a child is born, one should look at his two hands that will produce and not his one mouth that shall consume.

On the other hand, another camp contends that children are economic liabilities. This group would draw people's attention to how much one spends for food, clothing, education, etc., attendant to raising children. In extreme cases in some western countries a choice is made between having an additional child or buying a second car.

There is, of course, one economic ethical population issue on the macro-level of analysis, which is so important that it became a debatable issue at the World Population Conference in Bucharest in 1974. The issue being, whether family planning and population regulation programmes per se can successfully contribute to economic development and the alleviation of poverty vis-a-vis that economic development by itself leads to an alteration of fertility behaviour and it is only when an improved total environment is created that family planning and population activities can hope to succeed (Callahan).

If the theory of demographic transition applies to nations in Asia and Oceania then once nations have obtained a certain economic level such as, for example, per capita incomes within the range of US$600 to US$1,000 then the birth rate will begin to decline, as was the case in the industrialized nations of the western world (Uphoff). The problem is that, in the presence of rapid population growth, this economic level becomes exceedingly difficult to attain. On the assumption that US$50 per capita per year at 1964 prices represents the poverty line, ESCAP data revealed that 32.5 per cent of the population of India and Pakistan, 28 per cent of the Philippines and 38 per cent of the population in Thailand is earning less than US$50

(ESCAP). With rapidly increasing population and limited employment opportunities, the proportion of people living below this povery line may be expected to swell, negating attempts at improving prevailing per capita incomes.

The evidence in the Asian region seems contradictory indeed as to whether economic development leads to fertility decline, or that fertility decline and declining rate of population growth help bring about economic prosperity. The case of the Republic of Korea and Sri Lanka are interesting cases of contrast. While the rate of economic growth in South Korea has been phenomenal (11.4 per cent), its rate of population growth (1.99 per cent for the period 1970-1975) has not declined as fast as expected. On the other hand, Sri Lanka has remained less developed economically, yet its fertility rate and rate of population growth has declined considerably. The rate of population growth as estimated in 1978 is down to 1.6 to 1.7 per cent (Nesiah). Fertility rate is said to be declining at 6 per cent per year.

Politics and Ethics

At this point in time, many governments have already formulated their own population policy. But this does not mean that governmental population policy is not a nursery of ethical issues. For example, in one Population Conference in the Philippines, the president of one prestigeous private university in the Philippines, proudly announced that his University has a massive family planning programme among the Aetas, the aborigines of the Philippines. One of the participants then asked him, "Are you in fact systematizing the extermination of the Aetas - an already fast disappearing ethnic group?".

The same question may be asked by other ethnic communities and other minority groups in many countries whenever family planning and population regulation is applied on them by the government. I wonder what the Chinese and the Indians in Malaysia would say if family planning programmes are imposed on them? What about in the other countries, how would the different ethnic communities in the minority react to population regulation efforts?

There are also fears arising from the fact that population regulation may ultimately reduce a country's manpower relative to another especially that for defence.

There is, of course, another dimension of the problem, and that is the tendency towards politicalization of fertility policies. On the one hand are those officials in many developing countries who would not openly advocate fertility regulation less such becomes a cause for their defeat in the polls (Tapinos). On the other hand, there are countries with no official population policy, but their population have already stabilized. These seven countries that have reached a replacement level for its population or has reached population stabilization level are Austria, Belgium, East Germany, Luxembourg, Sweden, United Kingdom and West Germany. It is interesting to note that these countries do not have any conscious national effort to move towards stabilization (Brown).

One then wonders if political decisions by national officials really affect people's fertility behaviour. Might not the pressure from "community leaders or even family leaders who can identify and articulate a community or personal need better than the more remote national government" be a better mechanism? (Piotrow)

Distributive Justice

On the micro level of analysis, there is the ethical issue of who should bear the burden of reducing family size. Some people say that only the financially poor and those genetically inferior (including those with low intelligence quotient) who should not have more children. In other words, those who can afford, can have as many children as they want. In fact, this group thinks that the highly intelligent, handsome, and beautiful should in fact procreate more for the sake of improving their race, if not of mankind.

On the other hand, there is another group who thinks that the burden of reducing family size is the responsibility of all - rich and poor, intelligent or dull and beautiful or ugly.

A related issue is whether only the developing nations need to do something to arrest population growth and not the highly developed nations. It might also be mentioned here that the developed countries with much less of the total population are consuming much of the world's resources. It has been said that the "richer 19 per cent of the earth's population controls 64.5 per cent of the world's gross national product. On the other hand, 1,400 million of its inhabitants representing seventy nations with 32.6 per cent of the population of the planet, control a mere 4.4 per cent of the total wealth". (Echeveria) Is the problem not more of redistribution of wealth rather than regulating population growth?

Another ethical issue related to distributive justice is the question of whether the government has the right to adopt population regulation incentives that are reward or punishment oriented?

In one state in India, it was noted that in 1962 a sari was given to a woman acceptor or a lungi to a male acceptor of family planning. (B.S. Parakh)

In Singapore tax variations or housing allocations militate against large families. Allowances of all kinds (educational, living etc.) stops with the third child. (F.T. Sai) In the Philippines, maternity leave and tax deductions stop with the fourth child.

What criteria does one use to judge whether a population related incentive is good or bad? Is it because of flat equality (one person, on vote)? equality in proportion to benefits derived? need? ability? effort? etc. (Veatch)

It is suggested that in considering what is just, one need to bear in mind the Bentham principle of the "greatest good to the greatest number". This, of course, raises an ethical issue of which should come first the welfare of the individual or that of society. An ideal situation perhaps is where the "greatest balance of good over evil for self, society and the universe" (Callahan) lies, if and whenever possible. However, the most difficult ethical issue to resolve is when one is torn between two equally good choices.

Perhaps, the solution on what is just lies in the philosophy of life of a people. In the People's Republic of China, it is a case of society first, the individual second. Hence, the group pressure is a most effective means to population regulation. This takes the forms of late marriages, and when they get married, they are expected to limit their children to two.

Values Clarification

Discussed above are some of the most basic ethical issues on population education. It has been argued that population education is value laden. It does not mean though that moralizing type of teaching, whereby teachers deliberately impose their values on the pupils should be resorted to. A Unesco publication recommends value fair teaching/learning situation, which is described below.

> "The basic assumption of a value-fair situation is that there are no population-related decisions or actions which are by nature "right" or "wrong". In this situation, it is the task of the educator to provide content (both factual information and information relating to different value positions) which will enable learners to evaluate the range of options for a given issue. This does not mean that the teaching/learning situation, or the educational process or programme, will be bias-free but rather that the biases and related attitudes and values will be identified and open to evaluation.
>
> The educator's obligation is to present content in a value-fair manner, to make clear the reasons for his own opinions and encourage other positions to be developed and defended; it is the learners' responsibility to ascertain their own positions, make their decisions and determine their actions. As long as their judgements are arrived at by a process of conscious and informed evaluation and decision-making which takes into account personal and social consequences, their attitudes, decisions and actions will in no way be predordained." (Unesco)

Perhaps the team responsible for popularizing teaching about values, later called values clarification, which is a type of value fair teaching, is that of Louis E. Raths, Merril Harmin and

Sidney Simon. As originally conceived values clarification involves three processes: choosing, prizing and acting. A value emerged or is clarified after going through seven basic steps, which are as follows:

Choose:
1. freely
2. from alternatives
3. after thoughtful consideration of the consequences of each alternative

Prizes:
4. cherishes, is happy with the choice
5. willing to affirm the choice publicly

Act:
6. does something with his choice
7. repeatedly in some pattern of life.

One population educator (Veatch) says that many facts, for that matter population data, carry moral baggage. However, it appears more logical to hold on to an argument that is supported by factual data. Indeed, values clarification should be much more than what was originally envisioned by Raths, Harmin and Simon. In the original scheme of Raths and associates, one makes a free choice between two alternatives, perhaps that of a big family vis-a-vis a small family, based mainly on one's affect - i.e., values or beliefs.

Then whatever choice one makes, is supposed to make him happy, which does not always follow. Then he is expected to affirm publicly his choice. Normally a person does, as he is hooked up into the choice. And then one goes on with his choice for life - as if a person's values never change, undergo modification and/or radical change.

Values clarification, necessarily must be cognitive based. This is where population data - the output of empirical research, become indispensable. The values clarification models which are not merely affective based but cognitive based as well are given in Appendix A (Teaching Process for Teaching a Moral Dilemma) and Appendix B (Sweeney, Parsons' Social Issues Model). These models are merely appended, which implies that you may get insights from them, and devise your own, but certainly not to adopt as is.

Concluding Statement

In thinking about ethical issues in population education it is perhaps better to be guided by the declaration of principles of the World Population Conference at Bucharest which states that: "All couples and individuals have the right to decide freely and responsibly the number and spacing of their children and to have the information, education and means to do so; the responsibility of couples and individuals in the exercise of this right takes into account the needs of their living and future children, and their responsibilities towards the community".

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Appendix A

Model 1 - Population Education: Teaching Process For Teaching A Moral Dilemma

Whether we like it or not, family planning constitutes a moral dilemma for many individuals.

Galbraith and Jones have recommended a model for "Teaching Strategies for Moral Dilemmas" (see Diagram of the Teaching Process for Teaching a Moral Dilemma - p.)

1. Confront a Moral Dilemma

   a. Introduction to the Dilemma

      Below are two points of view:

View # 1	View # 2
Large families are God's will. It is a mortal sin to limit one's fertility.	It is a mortal sin to beget children that one cannot feed.
Large families promote morality and help prevent divorce or infidelity.	Large families promote immorality. Either husband and wife are lured into easy money, if only to support a big family.

   b. Definition of the Dilemma

      Those views are divergent and constitute a dilemma, though only to those who are Roman Catholics, perhaps. It is a problem only to those who believe that there is an element of truth to both, hence posing cognitive dissonance on the person confronted by the above issue. To one who has internalized either of the two value positions, however, there is no dilemma.

   c. Statement of the Nature of the Dilemma

      It appears from the two opposing views that, as Lucretius once said, "What is food to one man may be fierce poison to others". The problem boils down to:

      1. Which view should one take? Why?

      2. How does one justify taking one position in favour of another?

2. State a Position on the Original or Alternative Dilemma

a. Establishment of the Individual Position for Action

The teacher encourages individual students to make a stand, guided by his own convictions.

b. Establishment of the Class Response to the Position of Action

The teacher motivates the students to make an assessment of the overall position of the class. A good test to determine how controversial the issue is, is the extent to which the class is almost equally divided. To insure a lively, intelligent and/or affectively loaded discussion, the teacher must present more arguments to strengthen the apparently weaker position.

c. Establish the Reasons for Individual Positions

To crystallize their thoughts, the students discuss the issue, and then write their own reasons for a position taken. Making students write their positions and reasons will insure that everybody is involved, and not just those who are more active during class discussions.

3. Testing the Reasoning for a Position on the Dilemma

Galbraith and Jones say, "This is the most important step in the teaching process. It gives the members of the class an opportunity to test their reasoning against others. Each class session usually involves a full class discussion; however, deploying students in small groups for several minutes can help to involve more students in the discussion. It also generates additional reasons, and helps to focus on the 'best' reasons for action. Meeting in small groups prior to a full discussion gives a person a chance to think about and share reasons for an exchange among class members. The task of the small group usually involves the preparation of a defence for a particular position by listing all of the best reasons for recommending a specific action."

a. Select an Appropriate Strategy

One strategy is to divide the class into two main groups The members of each group are those in agreement with one of the two views in the situations.

b. Examine Different Individual Reasons within the Class Group

Let each member of the group enumerate all his reasons for an action. Find out if these are common reasons. Let the group agree on the three most important reasons for a given action on the dilemma, arranged in a hierarchy of significance.

The different groups list their reasons on the blackboard. These are explained. Encourage the members of the opposing group to challenge the reasons given by the other group.

c. Examine Reasons as They Relate to the Problem

Makes sure that the class members relate their reasons to the basic problem under consideration.

4. Reflect on the Reasons for a Position

This part of the valuing process has two sub-steps, namely: 1) summarizing the reasoning discussed in class, and 2) stating a reason.

a. Summarizing the Reasoning Discussed in Class

Encourage the students to reflect on the pros and cons of each view.

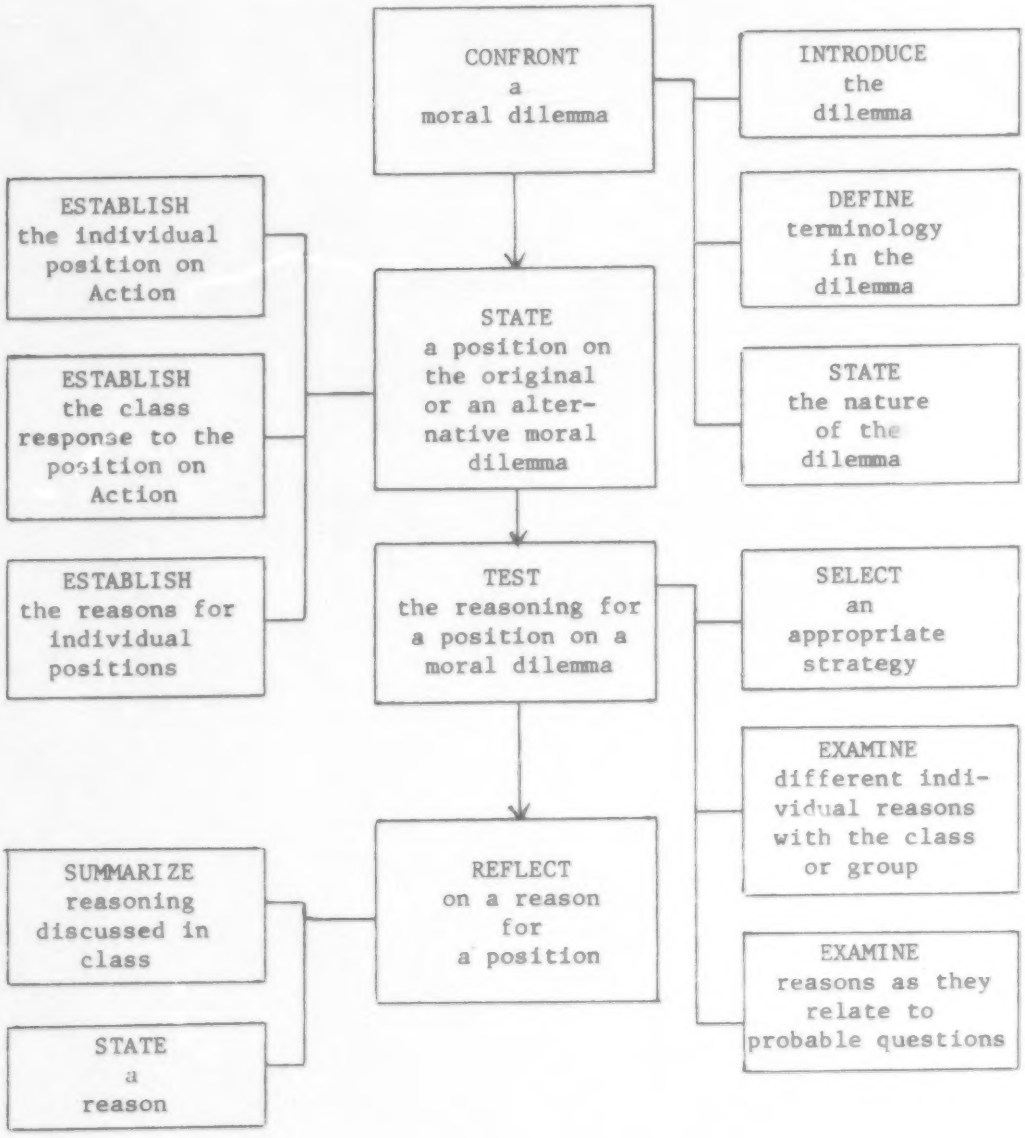
The teacher may also ask the students if they think there is a "right" answer to the moral problem. The teacher may provide the student an opportunity to introduce new reasoning or materials at this point.

b. State a Reason

It is hoped that at the end of the lesson, every student will arrive at a defensible view, which is well reasoned out. Ideally, the whole class should come up with one position, but this is not often possible with a difficult moral dilemma such as the controversial issue upon which this discussion focusses on. It is not unlikely then as Galbraith and Jones say, that, "They should leave the classroom still wondering about the best response to a difficult moral problem."

It is only in a valuing climate that decision-making can take place. The decision is one that is of the students, by the students and for the students, and never that of the teacher. And since it is the choice of the students, they will be committed to whatever slant of the views they take.

DIAGRAM OF THE TEACHING PROCESS FOR TEACHING A MORAL DELEMMA


CONFRONT a moral dilemma
INTRODUCE the dilemma
DEFINE terminology in the dilemma
STATE the nature of the dilemma
ESTABLISH the individual position on Action
ESTABLISH the class response to the position on Action
ESTABLISH the reasons for individual positions
STATE a position on the original or an alternative moral dilemma
TEST the reasoning for a position on a moral dilemma
SELECT an appropriate strategy
EXAMINE different individual reasons with the class or group
EXAMINE reasons as they relate to probable questions
REFLECT on a reason for a position
SUMMARIZE reasoning discussed in class
STATE a reason

Source: Ronald E. Galbraith and Thomas M. Jones, "Teaching Strategies for Moral Dilemmas" Social Education, January, 1975.

Appendix B

Model 2 - Social Issues Model: To Control Or Not to Control Population Education

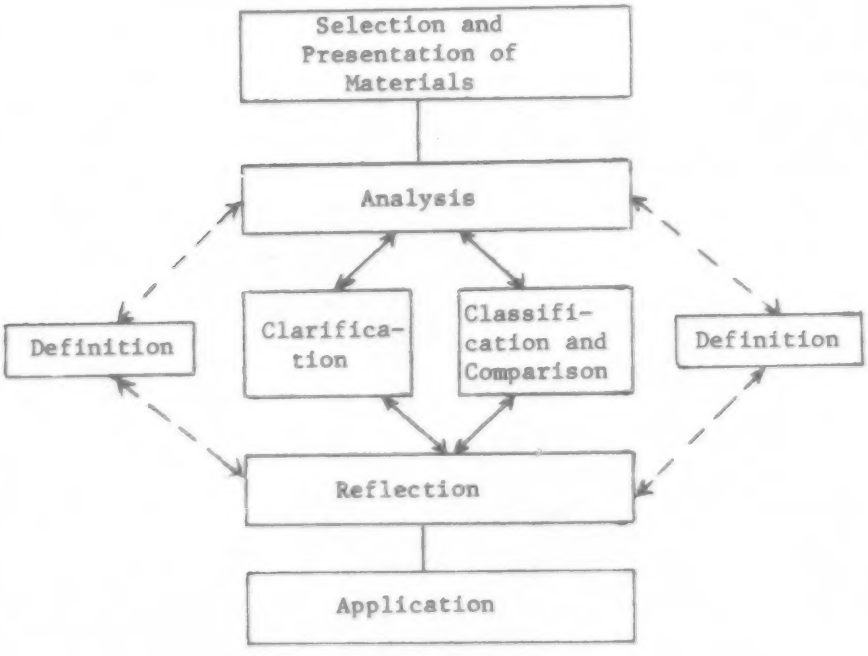
by Sweeney and Parsons

(Adapted for population education
by Leonardo de la Cruz)

The population problem is real problem, and one of the ways through which people may be made to realize it is through the schools. Hence the massive population education drive in the schools. Education implies the acquisition of knowledge via inquiry or any of the discovery-oriented strategies, and the internalization of a new behavior posture via valuing or values clarification.

One values-clarification approach is Sweeney and Parson's Special Issues Model. The model is diagramatically presented as follows:

SWEENEY, PARSONS' SOCIAL ISSUES MODEL



I. Selection and Presentation of Materials

Selection of Materials. Since the launching of a massive population education programme for the schools, the amount of reading materials alone, not to mention visuals and films, has increased enormously. It is therefore necessary to determine what materials

to make available to children at different grade levels. The problem, however, is aggravated by the fact that population concepts are integrated in five disciplines in the schools, namely in social studies, mathematics, science, health, and home economics.

What guidelines might be borne in mind in the selection of materials?

1. Are the materials appropriate for the age and/or grade level?
2. Do the materials fit into the conceptual frame work of the mother discipline?
3. Do the materials present all sides of the issue?
4. Is the language within the reach of the learners?
5. Are the materials appropriate to the Philippines situation?

Sweeney and Parsons cite many sources of materials: "Songs and poetry offer a medium of expression which students can respond to in a positive matter. Literature and especially novels offer a fruitful choice of materials which can be used effectively. The teacher can take portions of dialogue from a novel that contain the issue to be discussed and present them to the class. Role-playing exercises involving social issues content, as well as games and simulations, can and should be used in the social issues classroom. Paintings often did work with social issues content and can be analyzed productively by students.

Obviously newspapers, periodicals, and quotations provide another rich area for materials acquisition."

Presentation of Materials. A simplistic way of presenting materials is to let students read two sets of contradictory materials. Then a brainstorming session follows. However, for young children this may not be the most effective way. Simulation is recommended. Below is one way of doing it.

Prepare 6-8 blocks which, when stacked vertically together, exceed slightly the length of a meterstick; one meterstick; instruction sheets for two observers, a block-stacker and the meterstick holder.

The Activity

Ask for two volunteers to be the meterstick holder and the block-stacker, respectively. Give the former the meterstick and his instruction card (1) Give the block-stacker his instruction card and (2) point out the pile of blocks. Information on the cards is not to be revealed.

Give the meterstick holder observer card (1) and the block stacker observer card (2) to the observers.

Instruction Cards:

Meterstick Holder (1)

Your task is to prevent the block stacker from ever achieving the height of your meterstick.

First, hold the meterstick vertically next to the blocks as if to aid the stacker in achieving his goal.

Second, knock the blocks down before they reach the tip of your meterstick. At first, subtly, as if by accident.

Whatever happens thereafter, never let the blocks be stacked as high as the meterstick. Keep on knocking them down.

Block Stacker (2)

Your task is to stack blocks higher than one meter, vertically.

The pile of blocks that you see will, indeed, reach higher than one meter when stacked.

A person will assist you in measuring your stack by holding a meterstick adjacent to it.

Whatever happens, continue to try to build a stack over one meter high. Never give up.

Explain that this is in effect what happens in many social issues. One builds up arguments say for population control, but another person virtually shatters that by advocating the opposite view.

II. Analysis

After the simulation, the reading materials, visuals, etc, are made available to the students. They will analyze these. Analysis in this context is virtually tearing the contradictory arguments into discrete parts. As Sweeney and Parson say, "These parts might include: a) what the materials say; b) what the intention is; c) how the students thinks the material wants him or her to feel; d) the action (what's happening) of the material; and e) why it happened. (No order implied).

Take for example the statement, "When you see a new baby, do you look at the mouth and think how much he will eat or the hands,

and think how much he will do?" Even such a short cliche can be subjected to analysis, using the criteria for analysis suggested by Sweeney and Parsons.

III. Clarification

Sweeney and Parson has this to say about the goal of this phase of the model. They say that it is meant "to help each student understand where he or she stands on values that are relevant to the controversy being discussed."

Values-clarification is not to be equated with 1) differentiation of fact from value, and 2) analysis of value judgements. To illustrate:

A. Fact and Value

1. What is our current population policy? (Question of fact)
2. What should be our population policy? (value)

B. Analysis of Value Judgement

Family planning should be made compulsory among poor people.

C. Clarification of Values

Value clarification exists where two equal goods or evils confronts an individual. For instance, when a new baby, do you look at the mouth and how much he will eat, or at the hands and think how much he will do?

The three main steps in the classification and comparison phase as suggested by Sweeney and Parsons are:

1. Probe and underlying values in the materials presented;
2. Compare the underlying values in the materials with student values;
3. Discuss other examples of similar value conflicts.

IV. Classification and Comparison

In this pahse of the model, the students are asked to identify and classify the basic values contained in the materials. Bruce Patty's cartoon found on the next page illustrates a good classification and comparison.

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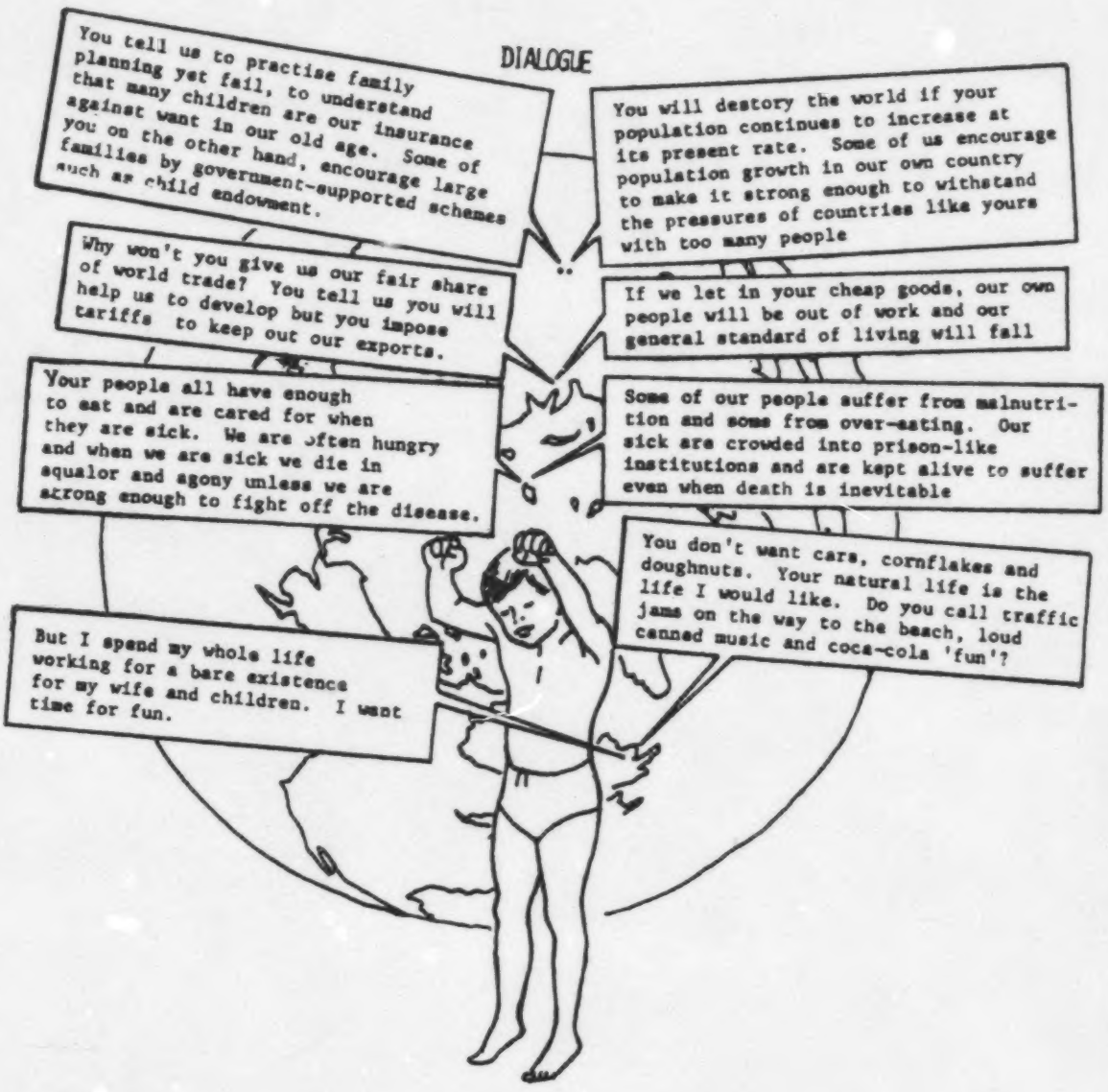
DIALOGUE
You tell us to practise family planning yet fail, to understand that many children are our insurance against want in our old age. Some of you on the other hand, encourage large families by government-supported schemes such as child endowment.
You will destory the world if your population continues to increase at its present rate. Some of us encourage population growth in our own country to make it strong enough to withstand the pressures of countries like yours with too many people
Why won't you give us our fair share of world trade? You tell us you will help us to develop but you impose tariffs to keep out our exports.
If we let in your cheap goods, our own people will be out of work and our general standard of living will fall
Your people all have enough to eat and are cared for when they are sick. We are often hungry and when we are sick we die in squalor and agony unless we are strong enough to fight off the disease.
Some of our people suffer from malnutrition and some from over-eating. Our sick are crowded into prison-like institutions and are kept alive to suffer even when death is inevitable
You don't want cars, cornflakes and doughnuts. Your natural life is the life I would like. Do you call traffic jams on the way to the beach, loud canned music and coca-cola 'fun'?
But I spend my whole life working for a bare existence for my wife and children. I want time for fun.

V. Reflection

In this phase, Sweeney and Parson suggest the following guide questions:

1. Have I changed my values? In what way? Why?
2. Have my values remained as they were? If so, why?
3. Have I modified my values? In what way? Why?
4. Having made a decision about the issues involved, what are the implications of the decision? How do they affect me as an individual?
5. What can I do about my decision?
6. If I do act, what are the alternatives to my action?

VI. Application

This is the commitment phase of the model. Sweeney and Parsons suggest two questions to help students at this stage, namely:

1. Assume that you are in a position to solve most of the problems that we have discussed. Do you think that action should be undertaken? If so, by whom?
2. In which of the cases would you say youth would have the hardest time affecting the social order? In which case would they have the least difficulty?

The summative evaluation should be the extent to which the student actually behaves on the basis of a value position he has chosen to embrace which hopefully is one that is consistent with national development.

Reference

Jo A. Cutler Sweeney and James B. Parsons, "Teacher Preparation and Models for Teaching Controversial Issues" Controversial Issues In the Social Studies: A Contemporary Perspective. Raymond R. Muessig (Editor) NCSS, 45th Yearbook, 1975.

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RESEARCH AND EVALUATION IN POPULATION EDUCATION

Research and Evaluation in
Population Education

D. 23

Introduction

The importance of research and evaluation in population education has long been recongnized by educators in Asia and Oceania. In fact these concepts have consistently been part of the recommendations of regional meetings, seminars, workshops and courses from 1970 to 1978. Research, as distinguished from re-search (searching again what has been discovered before) is essential in creating a fountain of knowledge from which an emerging discipline like population education may draw content and methodology attendant to more systemative programming. Scholars working in the field of population education have been engaged in multi-dimensional research activities designed to build up the knowledge base needed for the preparation of conceptual framework for curriculum and materials development,

* Paper prepared for presentation in IGCC/IPPF Workshop on Population Education Programme Administration, Malaysia, 11-13 September 1979.

motivational strategies and techniques, and training modalities. Likewise, evaluation or what some scholars refer to as evaluative research has been undertaken by educators and practitioners in population education. Both concepts - research and evaluation are discussed in this paper in relation to population education.

RESEARCH

Research may be defined as a process of inquiry in search of new knowledge of new dimension of existing knowledge which meets two conditions, namely - i) internal validity which prevents the operation of confounding variables by careful control mechanism and ii) external validity which provides basis for generalization of the findings of the inquiry through proper sampling. Selection of research designs characterized by both types of validity is ideal. Following this definition of research and reviewing the research work, one invariably comes across inquiries which may or may not have internal validity and/or external validity.

There seems to be four forms of research-experiments, studies, surveys and investigations. Each of these four classes of research has its own advantages and disadvantages. The selection of a particular class of research will depend upon the purpose of the inquiry.

The nature of the four classes of research are presented schematically in the following table:

Table[1/]

Four Classes of Inquiry

Presence of S*	Presence of C*	Class
-	-	Investigation
+	-	Survey
-	+	Study
+	+	Experiment

Note:

S (Sampling) indicates meeting criteria of external validity;
C (Control) indicates meeting criteria of internal validity;
Symbols "+" and "-" indicate presence or absence of "S" or "C".

1/ Adopted from Egon G. Guba's paper on Experiments, Studies, Surveys and Investigations, Mimeographed.

The detailed descriptions of the characteristics of each of these classes of research are presented below:

Investigation: Some of the researchers categorize it the least adequate form of inquiry as it lacks internal as well as external validity. Most of the research in education including population education have been in this form not because educators lack the know-how but because the situation in which they operate forces them to use such type of research. For example, if one wants to try out newly developed curricular material in population education he shall be dependent on the co-operation of the school administrators and, therefore, must work in schools where they would like him to work and under the conditions prescribed by them. Moreover, he may not be in a position to re-arrange classes and schools, and to influence the principals from acting the way they normally do. These are the conditions under which one mostly conduct research in population education. If all these circumstances are inevitable, would it be advisable to cease doing research altogether? Definitely not, as the value of the research is judged from the purpose for which it is undertaken. Most of the useful researches in population education are probably those in which the findings are suggestive rather than conclusive, heuristic rather than definitive. And thus the investigation type of inquiry is very useful for such purposes.

Study: The third form of inquiry is the study in which sampling may be highly inadequate but the controls are likely to be excellent. The typical situation for a study is that of classroom evaluation. For example, 200 elementary school teachers may have enrolled in a one-unit population education course, and one would like to find out if the objectives of the course have been accomplished. Under this situation, the sampling problem of course is not germane: the curriculum is being tried with this group in this particular training institute, and one is also not very much concerned whether the results of this evaluation will be applicable elsewhere or to some other groups. The primary concern is to control the variables which might make a difference in the judgement of the extent to which the objectives of the curriculum are being met.

Another example of a study situation could be when we would like to test some methodology such as simulation technique or module approach for teaching population education. While testing the methodology, one would not be concerned with the idea of generalizing the findings of the study rather one is interested in getting a rough idea of whether the methodology is understandable or whether it generates the expected results. For such preliminary methodological inquiry, the study may be entirely relevant.

Experiment: This is an ideal form of research design. It requires that rigorous conditions of both internal and external validity be met.

By and large, the experimental type of research is conducted largely to answer cause and effect relationships. Moreover, the

experiments are also required if one wants to determine the extent of difference on certain variables between two groups. For example, if one wants to find out which of the two teaching methods is superior to the other for teaching population education at sixth grade level we may have to conduct an experiment with two different groups of sixth graders by teaching them using two different methods under experiment and controlling other variables.

There are hardly any experimental research done in population education. There are, however, quasi-experimental research studies such as those done in Indonesia, the Philippines and Thailand.

Research Utilization: Since population education programmes were launched in countries in Asia and Oceania in the early 1970's, many research studies in the investigation, survey and study categories have been done. However, many of such research studies are not being fully utilized, if at all. There is the acute problem of research utilization in population education, which takes the forms of under-utilization and non-utilization. Under-utilization exists when i) research findings falls on the laps of decision-maker, but by and large do not find translation into policy, programme formulation and implementation; ii) research data undergo analysis only on the primary or univariate level; and iii) research findings wind up in library shelves to be re-searched (search again) by students and academicians. Non-utilization is perhaps even more serious and this is largely due to the fact that many research studies are either too theoretical or are couched in technical language that are incomprehensible to practitioners in population education.

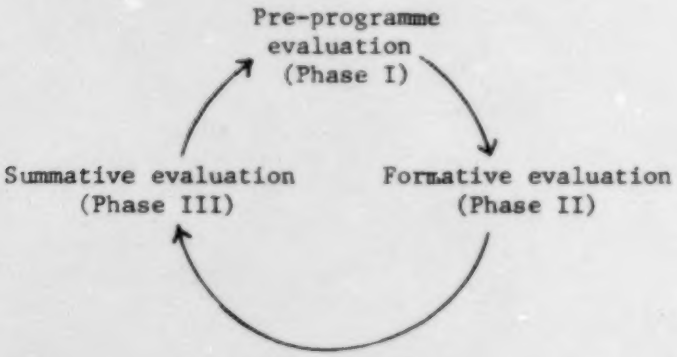
To overcome the problem of lack of dissemination and utilization of research findings in population education a number of countries undertook studies to determine the strategies to enhance the degree of utilization of research studies. The study conducted in the Philippines on research utilization indicated that the publication of research findings in layman's language and in such form as comics help increase the degree of utilization of research findings by the practitioners. Moreover, it was found in the Philippine study that the creation of a research linkage mechanism involving practitioners, administrators, policymakers and researchers go a long way towards enhancing utilization of researches in population education.

Evaluation

To some scholars, evaluation is thought of as a kind of research, hence the term evaluative research. For purposes of this paper, L.J. Cronback's definition of evaluation is accepted: "We may define evaluation broadly as the collection and use of information to make decisions about an educational programme". 2/

2/ *Professor Lee J. Cronback, Essentials of psychological testing, 2nd edition, New York, Harper and Row, 1960.*

The emphasis of this definition is on the collection and use of information needed in making decisions about educational programme, and for purposes of this paper, population education programmes. Evaluation is viewed as a continuous process which commences even before a programme is launched, and has no end for as long as the programme is alive. This may be illustrated as follows:



A sound population education programme, besides possessing other desirable characteristics, has built in evaluation mechanism through which evaluation is done at each stage of programme development. This ensures better results.

To assist project staff, teachers and field-workers in evaluating population education programmes and activities, the Unesco Regional Office for Education in Asia and Oceania developed a Manual on Evaluation in Population Education. The Manual is different from many other books on evaluation, in that it is now a collection of instruments needed in assessing various aspects of population education such as the evaluation of the programme itself, evaluation of curriculum materials and teaching/learning process, evaluation of learning outcomes, evaluation of training, evaluation of out-of-school activities, and management evaluation. Throughout the Manual, the need for the development of criteria, checklists, instruments, etc., for evaluating different aspects of the programme at various stages have been emphasized based on the belief that such is a step toward the development of teams of field personnel sufficiently equipped with the necessary know-how to plan and carry out evaluation activities at different levels in order to be able to make sound decisions about the development and implementation of population education programmes, both in the formal and non-formal education sectors.

The description below of pre-programme evaluation, in programme or formative evaluation and post-programme or summative evaluation is extracted from this Manual on Evaluation in Population Education.

Pre-programme evaluation. In its initial stage, the evaluatory process encompasses the following major components:

a) The need for a population education programme.

The process of evaluation for assessing the need for a population education programme may be regarded as involving a comparison between a state of affairs that now exists with a desired state of affairs. A country may have certain population problems, and it may be considered necessary to sensitize the populace to it, to an extent not attempted through present curricula in educational institutions and in educational programmes for out-of-school youth and adults. Likewise, a population education programme may arise from the felt need for it, as one intervention strategy for development.

b) The acceptability of a population education programme to the community.

Decision-makers sometimes assume that they know what is acceptable to the community, and go ahead with programmes. It would generally be preferable for them to ascertain the opinions of community leaders and others regarding the acceptability of a programme under consideration. This would usually be done by means of a questionnaire or interviews. Evidence of community acceptability not only can provide justification of a programme but also strengthen the position of project personnel in programme implementation.

c) The feasibility of the programme.

As in the case of other types of decisions, decision-makers may make up their minds on the basis of their best judgement, or they may have the question of financial and administrative feasibility carefully examined. The latter procedure requires the preparation of an outline plan. This is because financial requirements and administrative feasibility are related to the dimensions of a programme, and the possibility generally exists of tailoring the magnitude of the programme in accordance with the available finances and perceptions of administrative feasibility.

In-programme or formative evaluation. In-programme or formative evaluation of an educational programme focuses on the design and operational components of the programme with a view to gathering data for evaluating them and effecting improvements. Its basic purposes are two-fold namely:

a) to identify the strengths and weaknesses of the programme in its design and operation during the process of implementation; and

b) to suggest ways and means of improving the programme by maximizing its strengths, and reducing its weaknesses through the use of appropriate alternatives.

Among the components of an educational programme, the following need attention from the point of view of formative evaluation:

a) The objectives of the programme.

b) Strategies for achieving programme objectives.

c) Curriculum Materials.

d) Teaching-learning processes
   i) Teacher-learner interaction
   ii) Learner-materials interaction
   iii) Learner-learner interaction

e) Personnel Training

f) Programme effects
   i) The changes in the learners
   ii) The impact on other educational programmes, and the school system.

g) Programme management.

A word of explanation is necessary regarding the inclusion of item "f" in this list, as it is usually associated with the idea of summative evaluation. Programme effects are continuous throughout the operation of a programme in the sense that every programme activity has certain effects, and to the extent that the assessment of these effects helps in improving the programme as it goes along, the assessment is basically formative. An assessment of programme effects carried out on or after the termination of a programme is summative in so far as the programme is concerned.

Post-programme or summative evaluation. By post-programme or summative evaluation is meant the evaluation of the outcomes of a programme, both on a short-term and on a long-term basis, after its conclusion. As population education has a long-term time perspective implicit in its goals, it would be ideal if samples of learners could be followed up and the same test instruments as those given on the termination of the course repeated after some months or years. The difficulty of keeping track of learners over an extended period of time is not to be under-estimated, but it would be well worth the effort.

Who should conduct evaluation? Generally speaking, the educational programmes are evaluated by any or combination of the following approaches:

a) self-evaluation by those participating in the programme;

b) regular monitoring and evaluation of programmes by the programming agency itself;

c) evaluation by outside evaluators, with given terms of reference; and

d) follow-up studies of those who have participated in the programmes. 3/

In population education programmes approaches a, b and c of the above are being used singly and sometimes a combination of the three is resorted to arrive at a more objective assessment. Experiences have shown that total dependence on either inside or outside evaluators fail to study the programme in its holistic perspective as the insiders for one reason or another tend to overlook somethings. On the other hand, outsiders alone may fail to understand some of the local socio-cultural aspects affecting population education programme outputs, especially if the outsiders are not nationals and their stay in the country is too short. However, all evaluation approaches have their own merits and demerits. Therefore, based on the limited experiences in the region, it is suggested that the process-related evaluation for programme improvement might be conducted by insiders so that they learn from the process of evaluation itself while evaluation of the programme's impact on individuals, families, communities and institutions might be done by outsiders.

Evaluation by insiders does not mean only the professional evaluation staff will do it; but instead by a group of people composed of all project staff which includes the director and the specialists in each area at all levels. This team should sit down to analyze the programme, define parameters, list the variables involved, anticipate likely decision settings and articulate the information needs for making those decisions. However, in designing questionnaires, observation sheets, checklists, etc., the professional evaluators should play significant roles as they are trained in doing such work. But at the data collection stage, the entire field staff should be involved so that they would have the sense of involvement and thus more confidence in the outcomes of the evaluation studies.

It should also be borne in mind that population education being multi-disciplinary in nature cannot be evaluated objectively and reliably unless a team composed of specialists in the main disciplines where population concepts have been integrated, and those in population education, work together as members of the evaluation team. This is more so in out-of-school population education where population

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3/ *Rural Youth and Out-of-school Education in Asia, Report of a Regional Seminar, Unesco Regional Office for Education in Asia, Bangkok, 1974. p. 18.*

concepts are being infused into various development programmes such as adult education, literacy, rural development, home economics, health and nutrition, social welfare, agricultural, extension, labour, etc. Evaluation of population education, as integrated in these development programmes, will likewise mean contributing to a more systematic assessment of the impact of these programmes towards enhancing the quality of life of the individual, the family, the community and the nation.

Concluding Remarks

While a lot can be said about research and evaluation in general, not as much can be talked about when one deals with research and evaluation in population education. This is perhaps indicative of the fact that this component of population education has not merited the attention and support that it deserves from policymakers, planners, decisionmakers and key administrators in education. The participants in the 1978 Consultative Seminar on Future Directions of Population Education deplored this. The Seminar states, "The need for research and evaluation has been part of the recommendations of regional meetings, seminars, workshops and courses from 1970 to 1977. And yet not much effort had been done in responding to this need. The participants identified a number of reasons for this neglect. This includes lack of funds, lack of administrative support, time-consuming, lack of trained personnel, etc. In this regard, the participants identified the need to undertake research studies which are action-oriented, quick, relevant and utilizable. Corollary to this is a need to institute a mechanism by which results of research are utilized by policymakers, administrators and practitioners in decisionmaking and practice.

More specifically, other participants identified the need to conduct research and evaluation on such areas as formation and changing of values among students, socialization process, assessment of appropriate content areas relevant to various countries, training methodologies, and evaluation of learning outcomes on the ultimate target - the learners". If we are serious in ensuring the efficiency and effectiveness of population education programmes, then these needs identified by the 1978 Regional Seminar must be met immediately. After all, population education is one important intervention strategy for development.

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OUT-OF-SCHOOL POPULATION EDUCATION

Planning and Development of Out-of-School Population Education Programmes in Asia and Oceania*

D. 24

INTRODUCTION

Providing equal access to educational opportunities to each citizen of a country has generally been considered as one of the main educational objectives by many countries in Asia and Oceania. Most of these countries have heavily depended upon the formal education system to achieve this objective. To some extent, they have succeeded in increasing enrollment at different levels percentage-wise, though still far short of their needs and expectations. They are thus faced with an ever increasing problem of huge number of left out, pushed out and dropped out children, in addition to the already existing millions of adult illiterates. According to one estimate:

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* Paper prepared for presentation in the National Planning and Development Meeting on Out-of-School Population Education held in Malysia in May 1979.

> ... in 1965 there were 61.4 million children in age-group 6-11 out-of-school; by 1975 this number had increased to 73.1 million (of which about 62 per cent were girls). In the age-group 12-17 years, the numbers increased from 84.3 million in 1965 to 111.7 million in 1975. In the age-group 6-11 years (corresponding to the first level of education) the numbers of out-of-school children include those who have no access to school and a very significant proportion of those who have dropped out of school. It is estimated that of 27 million children entering grade 1 in 1970 the number who dropped out of school before reaching grade IV amounted to 13 million. The same pattern is discernible in the population of age-group 12-17 years. While the percentage of unenrolled declined from about 75 (in 1965) to about 70 (in 1975), the absolute numbers of those who are out of school rose. In the developing region, the numbers of children and young people out-of-school are about double of those in school. The majority of this out-of-school population is girls.[1]

At present, the formal education system is hardly catering to the learning needs of 50 per cent of the population. The developing countries in the region find it extremely difficult, if not impossible, to provide additional formal educational facilities to meet the learning needs of all their citizens. This leaves us with millions of out-of-school youth and adults in Asia and Oceania, who make individual as well as collective decisions every day affecting the welfare of the individual, family, community and nation. These millions of people rarely have any educational programme which could help them to understand the dynamics of decision making and the implications of rapid population growth. These alarming conditions thus make out-of-school educational programmes indispensable.

PLANNING OUT-OF-SCHOOL EDUCATIONAL PROGRAMMES

Out-of-school educational programmes are planned both at macro and micro levels. At the macro level, the needs are determined a priori and classified in some kind of typology. This approach is useful at the national level where it provides a basis to rationalize decisions for assigning priority to certain needs.

The micro approach involves the analysis of a local situation and the identification of problems, needs and resources at the community level. This approach is also known as the "environment-based" approach as it focuses its attention on the ecological system with its complex of economic and social relationships.[2]

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1. UNESCO, Education in Asia and Oceania: Progress and prospects, Paris, 1978, p. 9.
2. Rural Youth and Out-of-School Education in Asia, Report of a Regional Seminar, UNESCO, Bangkok, 1974, p. 11.

Both the approaches have merits and demerits. In many countries in Asia, the planning for out-of-school education programmes is done mostly at the macro level and very little, if any, attention is paid for planning at the micro level. But it has generally been recognized that macro planning focuses on a set of unified objectives or needs whereas the needs of the people at the community levels are divergent and vary greatly from community to community. Thus a programme based on predetermined unified objectives can hardly meet the learning needs of the people and consequently fails to secure the people's co-operation at the implementation stage. On the other hand, it has been observed that in the micro planning approach for out-of-school educational programmes involving the identification of problems, needs, setting of goals and objectives, mobilizing resources, assigning priorities to programme activities, becomes a joint effort of the programme organizers and the community members. This approach generally operates on the principle of local involvement in planning, execution, and evaluation of the programmes. During the process of planning, implementation and evaluation of a programme, the micro approach helps develop a sense of confidence and self-reliance among the people of the community for undertaking activities which are problem-oriented and, hence conducive to more fruitful and tangible results.

Attempts have been made in the region from time to time to assess the views of planners and administrators about suitable strategies for planning out-of-school educational programmes and varied points of view have been generated. However, the majority of experts agree that a combination of macro and micro approaches for planning out-of-school educational programmes will be a desirable strategy provided the principle of flexibility is observed throughout the planning and development processes.

Out-of-School Population Education Programmes

The planning for out-of-school population education programmes are no exception to this generally accepted planning strategy for out-of-school educational programmes. However, population education programmes added dimension to the already complicated process of planning as it will not only require adoption of general strategy but would also need the consideration of planners as to whether population education programmes have to be separate independent programmes or they will form part of other development programmes. This problem on the nature of out-of-school population education programmes was discussed in detail in a Regional Consultative Seminar on Population Education for Out-of-School Youth and Adults. The participants from nine Member States in Asia and nine United Nations Specialized Agencies and Non-Governmental Organizations unanimously recommended that out-of-school population education programmes should be integrated with other programmes of development carried out by different agencies in each country. However, the specific recommendations for planning out-of-school population education programmes of the seminar were as follows:

1. The national authorities should incorporate out-of-school population education as an integral part of an overall programme for development;

2. The planning approach should be one of combining the elements of macro and micro planning, to the extent that such combination is possible. For this the national authorities should endeavour to build a two-way communication system;

3. While drawing up a programme for out-of-school population education, the principles of co-ordination should be kept in view so that the programme does not run counter to already existing programmes. Moreover, the co-ordinating authority should ensure that relevant information has been obtained from and disseminated to all the agencies/departments, government and non-government, which are in one way or another responsible for out-of-school educational programmes. Provision should exist for periodical mutual consultations;

4. Where circumstances do not permit the launching of an extensive programme immediately, the nation authorities may conduct pilot projects to be followed by comprehensive programmes later on a bigger scale;

5. For effective planning at the national level, some form of a central co-ordinating authority, such as a population council or population committee should be created for overall planning, co-ordination, supervision and evaluation of the programme. It should, however, function in such a manner as not to curb the interest and initiative of agencies that are already at work in the field. 3/

The problems of adopting integration approaches were also discussed. It was considered essential to establish some formal "Resource Centre" at the national level with branches at the other levels, if possible, to help different agencies to integrate population education into their programmes and to develop different materials to meet the learning needs of diversified audience. The specific role of the Centre was perceived as a body that will provide technical back-stopping to various organizations engaged or likely to be engaged in population education activities.

3/ *Population Education for Out-of-School Youth and Adults, Report of Consultative Seminar, Unesco Regional Office for Education in Asia, Bangkok, Thailand, 20-28 October 1975. P. 12-13.*

Resource Mobilization

The adoption of integration approach for planning population education has a special advantage in utilizing the resources of on-going organizations programme in terms of institutions, personnel, funds, etc. It may therefore be essential to prepare first an inventory of such existing resources and utilize them fully before requesting for the creation of new ones. However, the need for special additional assistance to the on-going and new programmes for integrating population education component was fully recognized. This approach is therefore likely to help promote population education with the minimum additional input of resources.

National Programmes Development

The integration strategies were generally accepted both by the countries in the region as well as donor agencies. The United Nations Fund for Population Activities, and other funding agencies, therefore, provided necessary funds to interested Member States for planning and implementing out-of-school population education programmes. These programmes have been carried out by various ministries such as education, health, labour, agriculture, social welfare, rural development, and environment; non-government and voluntary organizations etc. However, the development of these programmes varies from country to country in terms of their magnitude and scope. Some of the programmes are experimental and pilot in nature whereas others are comprehensive in scope. These programmes also vary from the point of view of their coverage of the target audiences ranging from out-of-school youth and adults with varied interest and backgrounds. A greater diversity can also be seen in the approaches adopted by various Member States in the development of curricula, teaching-learning material, training of personnel, research and evaluation and dissemination of information related to population phenomena. However, while reviewing these programmes, invariably one comes across with number of common approaches which have been followed for organizing and implementing out-of-school educational programmes. A country-wise brief description of the development of out-of-school population education programmes as presented in the report of a recent Regional Consultative Seminar on Future Directions of Population Education is given in the following pages:

In Afghanistan, the Directorate of Adult Education and Functional Literacy which is an integral part of the Ministry of Education has an UNFPA assisted family health and adult education programmes. The main aim of the project is to evolve strategies for the integration of population education into on-going and new adult education and functional literacy programmes for both men and women. In Phase I of the project, prototype curricula and exemplary teaching-learning units for women are being developed and tested. The project intends to develop basic literacy and technical skills, into which population education concepts are to be integrated. Likewise, there are plans to train all field workers in population education. Besides this, other

organizations such as Democratic Association of Afghan Women, Family Guidance Association and Radio Afghanistan are also actively involved in population programmes.

In Bangladesh, the Agricultural Extension Institute of the Ministry of Agriculture has developed population education curricula and syllabi for agricultural extension workers. The Department of Social Welfare has recently launched an UNFPA-assisted population education project for out-of-school youth. A curriculum development meeting was organized in August 1977 by the Department of Social Welfare to draft syllabus for use in training leaders of out-of-school youth projects. The Ministry of Rural Development has also introduced population education in the "Co-operative Membership Education" programme. The Bangladesh Family Planning Association has also launched family life education programme through youth organizations. The association has since organized a series of 7-day training programmes for out-of-school youth.

In India, there is no national population education project, but there are in-school and out-of-school population education activities being carried out in some states. The National Council of Educational Research and Training (NCERT) and the Family Planning Association of India (FPAI) have developed some materials in population education. The universities are also taking active part in the promotion of out-of-school population education. For example, Tirupati University in Andhra Pradesh and Madras University have special programmes for the training of personnel as well as field extension programmes following a unique approach called population clums. Likewise, the National Adult Education Programme has incorporated population education in the training curricula for field workers in adult education.

In Indonesia, out-of-school population education activities have been undertaken by the National Population Education Project of the Department of Education and Culture together with the Directorate-General of Out-of-School Education and Sports. The programme was started in 1974 when 30 adult learning centres from the islands of Java and Bali (6 provinces) were selected for the experimental phase of the programme. Some prototype curricula and instructional materials were developed pre-tested, revised and finalized for use throughout the country. This programme was later on evaluated, modified accordingly and extended to cover all parts of the country. The programme plans to use different materials such as books for trainees, instructors' handbooks, training handbooks for PENMAS (Community Development Programmes) instructors, and supplementary readers (picture books). Other voluntary, semi-governmental and religious organizations either already have or are planning to include population education components in their out-of-school educational programmes. There are plans to develop special materials for audiences of the religious organizations.

In the Republic of Korea, various governmental and non-governmental agencies are involved in out-of-school population education activities. Among those are voluntary organizations like the Planned

Parenthood Federation of Korea and the Korean Institute of Family Planning. Population education materials for the out-of-school sector, consisting of printed materials, slides, tapes and cartoons were developed by the Korean Institute for Research in the Behavioural Sciences (KIRBS). The Central Office for Population Education (COPE) subcontracted this to KIRBS. New programmes for parents and out-of-school youth in rural communities were initiated this year (1978) in 800 primary schools in different parts of the country. One resource teacher in population education is found in each school.

In Malaysia, there are two major institutions which are primarily involved in reaching the out-of-school sector. These are the Federal Land Development Authority (FELDA) and the Institute of Agriculture. FELDA's population education programme attempts to create awareness and interest among the settlers, their leaders, and all Scheme staff in improving the quality of family life. Therefore, population education was introduced in 1977 as part of FELDA's training and field activities. The Ministry of Agriculture on the other hand runs seven Institutes of Agriculture which train youths who have completed grade 9 education, for work as agricultural technicians. Population education is one of their courses.

Population education for out-of-school sector in Nepal is implemented as part of the country's new literacy programmes launched with the assistance of district education officers, headmasters and teachers of primary, elementary and secondary schools. In addition, the Ministries of Agriculture, Panchayat, Health and Labour have been implementing out-of-school population education projects as integral component of their on-going programmes.

In Pakistan, population education has been included in the adult literacy curriculum. Likewise the Allama Iqbal Open University is actively involved in promoting awareness and education on the subject of population among adults through tutorials and correspondence courses. The Family Planning Association of Pakistan has directed its efforts to population education activities among audiences at various Industrial Training Centres.

In Papua New Guinea, there is no national population education programme but the Ministries of Environment and Conservation, Health and the Officers of Information and National Broadcasting Commission and National Planning have undertaken certain pilot activities to create awareness and interest among the key leaders and other leaders about population phenomenon and their implications on the development of the country.

In the Philippines, various ministries as well as some semi-governmental organizations are involved in out-of-school population education. One of the most massive programmes is the Integrated Human Resources Development Programme for Youth (IHRDPY), a project

of the Ministry of Social Services and Development. Its goal is to prepare youth who have left the formal school system for self-reliance in terms of economic productivity and social responsibility. The IHRDFY assists youth to train and engage in small, manageable, income-generating projects, in community volunteer service, in leadership, in socio-cultural and physical fitness activities, in nutrition and drug information drives, among others. Population Awareness and Sex Education (PASE) was infused as a component in 1973, with the initiation of a pilot project in selected provinces and cities. With assistance from Unesco, ESCAP and UNFPA, the project was expanded to national scale in 1975. In the Philippines, government and non-government organizations are involved in out-of-school programmes. The non-formal methods and techniques, derived from social work practice, used in this programme, allow for the active participation of youth in group discussions on different subjects. Built in the PASE project is an evaluation scheme aimed to measure changes in knowledge for the youth. The Ministry of Education and Culture has also included population education content in the citizenship training curriculum for adult and out-of-school youths. The newly established Office for Non-formal Education in the Ministry of Education and Culture is responsible for co-ordinating all out-of-school programmes.

In Sri Lanka, the Ministry of Health with UNFPA assistance has introduced some elements of population education into the pre-service and in-service curricula for personnel such as medical officers, nurses, mid-wives and public health inspectors. The Department of Labour has also infused population education concepts in their training programmes for workers.

In Thailand, the bulk of the out-of-school population education activities are assumed by the Division of Adult Education, Ministry of Education. A unique modality has been adopted by the Division, in which learners are not given a textbook, but a card is issued each session, and these cards gradually mount up to form a kind of text. Of particular interest is the concrete and functional approach to this programme. Topics which are raised on the cards include methods of rice farming, use of fertilizers and pesticides, identification of a good seed, basic health and maternity information, and simple investment and marketing facts. These topics are integrated with some family planning and population information. The Ministry of Education has a massive programme to integrate population education into all of its adult education programmes, with the active collaboration of various ministries, universities and research institutes. 4/

A review of the programmes as presented in the above paragraphs and the eight national case studies entitled, "Development of Out-of-School Population Education Programmes", commissioned in

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4/ *Future Directions of Population Education, Report of a Regional Consultative Seminar, Unesco Regional Office for Education in Asia and Oceania, Bangkok, Thailand, 14-21 August 1978. P. 24-26.*

Bangladesh, India, Indonesia, Republic of Korea, Pakistan, Philippines, Sri Lanka and Thailand by the Unesco Regional Office for Education in Asia and Oceania during the last couple of years, showed that the above description only presents partial picture. To support this conclusion the example of the Philippines is cited. The presentation on the Philippines in the Consultative Seminar report gives an impression that there were two major agencies responsible for planning and implementing out-of-school educational programmes whereas the national case study presented about 16 agencies having out-of-school population education programmes in the country.

The experiences have shown that even the case studies approach have not been provided with the full coverage of the programmes in the country. This conclusion was drawn on the basis of the outcomes of the National Planning and Development Meeting on out-of-school population education organized in the Philippines in November 1978. According to the report of the Meeting, there were 11 government and 11 voluntary organizations in the country which are actively involved in the planning and implementation of out-of-school population education programmes. It is also observed that besides securing information about the development of out-of-school programmes in the country, the Meeting has also provided a forum where representatives of these 22 organizations shared experiences, identified common problems and needs, developed a comprehensive national inter-agency programme and identified the leadership potential of participating agencies in planning, co-ordinating and implementing the activities of the programme. As a result of this Meeting, a scheme for the exchange of expertise has been started. It can thus be concluded based on the limited experiences cited here that planning and development meetings, if organized properly, can provide, not only a better picture of the development of existing programmes but would also facilitate the development of future inter-agency national programme in out-of-school population education.

Problems Encountered in Planning and Implementation of Out-of-School Population Education Programmes

During the course of planning and implementation of out-of-school population education programmes, the following problems have generally been encountered:

A. Planning and Co-ordination

1. Identification of target audiences, their problems and needs, resources available at the community, district, province, region and national levels, have generally been considered amongst the first few steps essential for planning an effective programme. Efforts are also made to do so but in general it is felt that there is hardly any effective mechanism that ensures participation of the target groups, the community and all concerned technical departments/ agencies in the identification of total needs, problems and resources for programme development at all these levels.

2. Mobilization and utilization of existing and potential resources (material, human and institutional) is another important component for developing sound programmes. As regards material resources, the out-of-school education programmes generally face the problem of lack of sufficient funds for planning and implementing population education activities. As far as the human resources are concerned, it is generally believed that there is dearth of trained manpower for planning and implementing population education programmes. The institutional resources in most of the countries are available to meet the requirements but the absence of any inter-departmental operational mechanisms to mobilize, and use their existing institutions for programme development many times results into duplication and wastage.

3. Lack of effective co-ordination mechanism - the countries undertaking out-of-school population education programmes have established some kind of co-ordination mechanism at the national, regional, provincial and district levels but have not clearly defined the operation of such co-ordination mechanism at the barangay lowest level such as village, etc. Failure to establish such co-ordination mechanism at grass-roots level has likewise resulted into duplication and wastage of resources.

B. Conceptualization

There is a lack of common understanding about the concept of population education among field functionaries of all allied departments and their respective target audiences. In most of the countries, many people equate population education with family planning information, education and communication appears ambiguous.

C. Personnel

1. Personnel with higher professional standings are reluctant to join out-of-school educational programmes because of lack of provision for equal status, salary and promotional prospects at par with that of the formal education programmes.

2. Most of the out-of-school educational programmes are being planned and implemented in the rural areas where the availability of qualified personnel is a dilemma. Very frequently, we come across with recommendations that the people living in the community should be recruited for planning and implementing out-of-school educational programmes but such recommendations are difficult to implement unless the existing rigid recruitment rules are modified to release the condition for minimum academic qualification in case of special groups such as women, and disadvantaged section of the population for selection into service.

D. Curriculum and Materials Development

1. Inadequate background data about the prospective learners (target groups) and their environments such as socio-cultural, religious and ethnic values, psychological frame-work, economic situation, interests and needs, level of understanding, linguistic preferences, access to different communication media and physical facilities for planning effective teaching-learning activities.

2. There is a general lack of training materials such as inter-disciplinary curriculum materials for the training of field workers and their supervisors, trainers, adminis-trators, planners, etc., at the community, district, pro-vincial, regional and national levels. Some of the orga-nization do not even have a detailed outline of the curricula for training of the field functionaries not to speak of the availability of training materials. It is also not un-common to find that the teaching-learning materials prepared by some of the organizations lack relevance to the needs, problems and environments of the learners.

3. Needless to say that supplementary reading materials play an important role in helping the learners not only to retain what he-she has learned but also to improve on them further. On the other hand, the absence of such provision leads to relapse into ignorance. Recognizing the importance of the role of supplementary reading materials most of the projects failed to make appropriate provision to develop such materials.

4. There is also dearth of materials for use in the mass media for creating awareness among the people to secure their support and participation in the out-of-school popu-lation education programmes. The mass media is being used for promotional purposes but the messages relayed through these media are not always complete and sequential as to create an impact on the audience which could lead to the development of positive attitudinal and behavioural changes among the target audience.

E. Research and Evaluation

Basic, as well as action research, and built-in evaluation is essential for effective planning and implementation of the programmes but unfortunately very limited attempts are made to provide those. This is partly due to lack of trained manpower and partly because of insufficient allocation of funds for research and evaluation activities.

F. Tendency to Formalize the Non-Formal Education

There have been a growing concern among the educators in this region to de-formalize the formal education system in order to make education more relevant to everyday life and to provide all citizens an equal access to educational opportunities. Plans are generally formulated and steps taken to implement them. But the experiences have shown that the joint meeting of educators from the formal and non-formal sectors designed to work out the detailed strategies to de-formalize the formal system, are generally dominated by the formal educators who intuitively or unconsciously lapse into formalizing the non-formal approaches for convenience vis-a-vis the objective to de-formalize the formal approaches.

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Integration of Population Education in Development Programmes for Out-of-School Youth and Adults*

D. 25

Population is an indispensable component of development. It is one of the key ingredients to development. As such its optimal proportion in relation to the other factors of development, such as environment, resources, level of technological development in any given community, country and society, need to be taken into account. It is sad to say that in the developing countries of Asia and Oceania, the problem is invariably that of having a population much more than what each country can fully harness in productive endeavours, and

* *Paper prepared for the Regional Training Workshop on Instructional Materials Development for Out-of-School Population Education. Philippines, 18-29 June 1979.*

much more than what the economy can provide with the basic necessities of life. An ESCAP paper estimates that "over 10 per cent of the labour force is unemployed in most of these countries, the rate going up to a high of 20 per cent in Sri Lanka." 1/ In many of the countries in Asia and Oceania, the quantity of food produced is not sufficient to meet the requirements of the population, so much so that Georg Borgstrom refers to our earth as the "Hungry Planet." 2/

The paradoxical thing is that in the developing countries the rate of growth of food production exceeds the rate of population growth. In the period 1970 to 1976, the rates of food production were 4.2 and 2.8 for the Near East and the Far East respectively; while the rates of population growth were only 2.8 and 2.5 respectively. 3/ Yet the vast majority of the people are hungry, for as Susan George aptly puts it, "Whenever and wherever they live, rich people eat first, they eat disproportionate amount of the food there is and poor ones rarely rise in revolt against this most basic of oppressions unless specifically told to eat cake. Hunger is not a scourge but a scandal." 4/

Likewise, the daily per capita calorie consumption in the developing country of the region is only around 2,000, compared with 3,000 in the more developed countries. 5/ United Nations agencies which are concerned with food/nutrition balance estimate that the minimum requirement to maintain health is about 2,300 to 2,500 calories per day. 6/ With many of the people being undernourished and malnourished, they are susceptible to diseases of all kinds. The root cause of this social problem is poverty. It is estimated that 40 per cent of families in the region are subsisting below the poverty level. In some countries crash programmes that take the form of social services or welfare services, which are dole-out oriented are now giving way to development oriented assistance, designed to help people themselves, so that one day they will no longer be ill-fed, ill-clothed, ill-housed and sick. It is in these development programmes where population education could be infused and integrated

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1/ *ESCAP "Review of Demographic Trends, Population Policies and Programmes in the Countries of the Region, Committee on Population," Second Series, 13-19 December 1978.*

2/ *Georg Borgstrom, The Hungry Planet. New York: The Macmillian Co., 1972.*

3/ *FAO The Fourth World Survey, 1977, p. 4.*

4/ *Susan George, How the Other Half Dies. England: Penguin Books Ltd. 1977, p. 23.*

5/ *ESCAP "Review of Demographic Trends, Population Policies and Programmes in the Countries of the Region." op. cit.*

6/ *"The Determinants and Consequences of Population Trends. New Summary of Findings on Interaction of Demographic Economic and Social Factors." N.Y., UN, 1973, vol. 1, p. 410.*

to make out-of-school youth and adults aware that unplanned population education growth could be detrimental to the people's quest for quality of life. However, the task of educating out-of-school youth and adults about the adverse effect of unplanned population growth on development is much more complicated than preaching to the already converted youngsters in school, since the target audiences in the out-of-school are a heterogeneous group: age-wise, interest-wise, level of literacy-wise, etc. Yet it is more compelling to expose these groups of out-of-school youth and adults to population education, as they are likely to have higher fertility rates and bigger size families than those who remain in-school especially beyond the secondary level. It is quite common in developing countries that those who are able to go through College/University are from the higher socio-economic status who are likely to be low fertility rates parents anyway. The out-of-school youth age 12-14 alone who are approaching the procreation stage numbered about 12 million in 1975 in Asia and Oceania. 7/ In many countries in the region, the out-of-school youth far exceed those who are in school, a great number to be neglected indeed.

The 1978 Manila Regional Consultative Seminar on Future Directions of Population Education (attended by 11 countries in the region) noted that "out-of-school population education programmes in Asia and Oceania are undertaken by various ministries such as education, health, labour, social welfare, and environment, as well as non-government and voluntary organizations." 8/ While the diversity in scope and magnitude of programming is recognized from country to country, there seems "to be a general consensus among the participating countries that out-of-school population education programmes have to be an integrated comprehensive educational programme, co-ordinated and closely linked with other developmental programmes of the country." 9/ This thinking is a reiteration of the recommendation of the 1975 Regional Consultative Seminar on Population Education for Out-of-School Youth and Adults, in which the participants from nine Member States in Asia and nine United Nations Specialized Agencies and Non-Governmental Organizations unanimously recommended that out-of-school population education programmes should be integrated with other development programmes carried out by different agencies in each country.

7/ *Unesco Development of Education in Asia and Oceania: Statistical Trends and Projections 1965-1985.*

8/ *Unesco ROEAO, Future Directions of Population Education." Report of a Regional Consultative Seminar, Manila, Philippines, 14-21 August 1978.*

9/ *Ibid.*

Population Education in Development Programmes

Population education is being integrated into various development programmes throughout the region as recommended by the different seminars and conferences from time to time. However, in discussing the relevance of population education concepts to the contents of development programmes and the modes of incorporation, the participants of the 1978 Consultative Seminar on Future Directions of Population Education felt that "population education for out-of-school sector acquires more relevance when interwoven into areas that preoccupies or interests the learners or are viewed as a solution, if not remedy to day-to-day problems. It is for this reason that population education has been integrated in various non-formal education programmes including literacy and adult education programmes, labour training and education, agricultural extension, food and nutrition campaign, skills development, social welfare drives, environmental education, urban renewal, manpower development, and rural transformation and development." 10/

However, the interpretation of the concept of integration varies from programme to programme and country to country, especially with reference to curriculum and materials development. In general, the integration of population education into many development programmes have been done by different countries and programmes following either one of the approaches described below.

Integration Approaches

1. Separate Unit Approach

The programme organizers who follow this approach have generally developed a separate unit course on population education and made such unit an integral part of the curriculum of on-going development programmes. This approach is mostly found in the training curriculum for field functionaries, and in some cases the teaching of out-of-school youth and adults. The examples of countries and programmes which follow this approach are given below.

Country	Project/Programme
a) Bangladesh	1) Population Education Project for the Out-of-School Youth 2) Co-operative Education Project 3) Integrated Rural Development Project
b) India	Population Education Projects of the University of Tirupati and the University of Madras

10/ *Unesco ROEAO "Future Directions in Regional Sectoral Programme in Population Education in Asia and Oceania." 1978, p. 18.*

Country	Project/Programme
c) Pakistan	Integrated Rural Development Programme
d) Philippines	1) Population Awareness and Sex Education Project (PASE) 2) Population Education Project of the YWCA 3) Population Education Project of the Rizal Youth Development Foundation

2. Infusion Approach

This approach generally calls for three stages. Firstly, identification of relevant population education concepts and the plug-in points in various development programmes where these concepts could be meaningfully integrated. Secondly, the selection and sequence of appropriate learning units. Finally, the preparation of detailed textual and/or audio-visual materials for use in the development programmes.

This is a rather difficult approach to follow as it requires high level of professional competency at all the stages of the process of curriculum and materials development. However, the programmes which have opted for this strategy have succeeded in demonstrating the relationships between population issues and quality of life of the individual, family and the community. This approach is currently being tried in various countries in the region especially in the areas of literacy and rural development programmes. A partial list of the countries and the programmes experimenting with this approach is given below:

a) Functional literacy programmes of Afghanistan, India (Uttar Pradesh - Literacy House, Lucknow; West Bengal - Bengal League, Iran, Nepal, Pakistan and Thailand.)

b) Rural development and vocational preparation programmes in the Philippines, such as the Agricultural Approach to Family Planning Project of the International Institute of Rural Reconstruction (IIRR), the Vocational Preparation Programme of the National Manpower Youth Council, the Home Economics and Food Production Programme of the Bureau of Agricultural Extension, the Small Farmers Development Programme of the Ministry of Agrarian Reforms, and the Functional Education Project of the PRRM.

3. Core Learning Kit Approach

This approach calls for the development of general curriculum and appropriate teaching-learning materials to meet the learning needs of the out-of-school population. This approach differs

from the integration and infusion strategies in the sense that it neither advocates the infusion of population education concepts into other disciplines nor does it form a unit within any other discipline. Instead, the advocates of this approach identify common areas of interests and needs of various categories of target audiences, predetermine sets of relevant population education concepts, translate them into a series of learning activities and prepare appropriate teaching-learning materials. All of these materials are then compiled in the form of modules or guides referred to as "core learning kits".

The field workers of various development departments are then provided training in the contents of the kit and their use in the field, especially emphasizing to the users the need for adapting the contents and the teaching-learning materials to varying socio-cultural context. At present, the Non-Formal Education Directorate of Indonesia and the Population Centre Foundation of the Philippines are experimenting with this approach.

The Three Approaches

The brief description of the approaches and their adoption as given in the above paragraphs indicate that not one of the approaches is universally accepted. Moreover, population education being comparatively a recent development has not been subjected to rigorous research and evaluation studies. There is therefore hardly sufficient empirical data that could prove the superiority of one approach over the others. It may, therefore, be advisable to try any of the above approaches and modify them in the light of the local situations and the experiences gained.

The general problem of integration of population education concepts in different disciplines was also discussed in the 1978 Regional Consultative Meeting on Future Directions of Population Education. The participants to that Meeting observed that, "curriculum and materials developed by the population education projects in some countries using conceptual and sequential approach to curriculum development lose their identity and focus when integrated in the subject disciplines." 11/ And some participants in the meeting were concerned. They said that if in fact population education concepts are that important, why should we allow them to disappear in the process of integration?

One then wonders if population education concepts for the out-of-school youth and adults suffer the same fate when integrated in development programmes. Not necessarily so. This is mainly because while in the formal school set-up content is by and large fixed by the nature of the discipline to which population concepts are integrated, contents in non-formal education are flexible and largely focused on actual problems which are not theoretical or hypothetical ones. And many of the day-to-day problems of out-of-school youth and adults are

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11/ Ibid.

riveted to population problems, and the foci of any development programmes. Problems like unemployment, landless tenants, predominance of unskilled workers, malnourishment and undernourishment, slum overcrowding, illiteracy, shortage of decent housing and clothings, prevalence of diseases, pollution of environment and increasing crime rates are largely due to unplanned population growth and movements. Population-caused problems are indeed the foci of many development programmes. Population concepts are therefore unlikely to disappear in the process of integration to development programmes, as is sometimes the case in in-school subjects.

Curriculum and Materials Development

The curriculum for out-of-school educational programme is ideally based on the needs and interests of the people it serves. Moreover, the observance of the principle of flexibility throughout the process is considered fundamental to ensure the development of curriculum based on problems and real needs, bearing in mind that such needs change over time. The curriculum development process thus generally includes activities such as the study of environments with special reference to the identification of needs and interests of the community and the learner's profile; defining the objectives and elaborating on contents areas and the methodologies, sequencing learning units and the development of instructional materials. The detailed process of curriculum and materials development has been presented in another paper entitled "Instructional Materials Development for Out-of-School Population Education." 12/ However, a few examples illustrating the integration of family planning/population education in development programmes have been selected from different programmes and presented below:

Agriculture

About 70 per cent of the labour force in 1970 in Asia are employed in the agricultural sector. 13/ This is probably the case even nowadays in many countries in the region. Population education materials in the context of agricultural development are therefore crucial. One such set of population education/family planning materials is the one developed at the International Institute of Rural Reconstruction (IIRR) in the Philippines entitled "Agricultural Approach to Family Planning." The approach makes use of parallelisms in the household and farm in educating people about family planning. Some examples are quoted below. However, only the text of flip-charts are included here and not the technicolored illustrations that go with every chart.

12/ *Ansar Ali Khan, "Instructional Materials Development for Out-of-School Population Education."*

13/ *UN. Implementation of the International Development Strategy. Vol. I, New York, 1973.*

(1)

The mango tree if laden with fruits
will oftentimes have broken and splintered branches.
Like a man with many children
if ever he succeeds it is a heavy burden.

(2)

Mango when planted should be far apart
so that the trees are big and strong.
When the trees are planted closely
then easily get crowded
that's why when they grow are naturally small.

Like a woman if child birth is properly spaced
children are big and healthy
because they are well taken cared.
If child birth is frequent
children are neglected oftentimes they quarrel.

(3)

A mango tree that doesn't bear fruits
must always be smudged
so that even when not in season it bear fruits.
If married couple believe they are sterile
they must always consult a doctor
in order to help them to understand the reason
and bear a child as an experience.

While the approach is labelled family planning rather than population education, it is a broader concept of family planning. Note that the first set of statements is suggesting small family size, but is not really specifying a magic number. In the second, the message is on spacing births; while in the third the importance of having children is a case in point.

Home Economics

The American Home Economics Association developed one interesting poster on family planning which also used parallelism. In this case a woman is compared to land. The text of the poster is as follows:

Land	Woman
Fertile enough to support high yield crops.	Healthy enough to bear strong children.
While the crop is growing the field must be weeded so that the plants will be healthy.	While the unborn baby is growing the woman must eat a variety of foods for a well-balanced diet so that she and the baby will be healthy.

Land	Woman
Prevent destruction of crops by getting rid of rodents, insects, etc., which spoil crops.	Prevent disease that might harm the unborn baby by visiting the clinic regularly before the delivery.
Then when crops are ready, there will be a good harvest.	Then when the birth occurs, it is more likely that baby and mother will be fine.
For the land to support the same crop again it must be allowed to lie fallow or be treated with fertilizer.	For a woman to bear another healthy baby, two or three years time between births is necessary for her body to recover and renew itself.

The Home Economics Division of the Bureau of Agricultural Extension in the Philippines initiated an Integrated Planning for Improved Living (IPIL). This is a clear case of integration of population education in a home economics extension development programme. IPIL is aimed primarily at rural women in the Philippines. IPIL is an integrated approach to various interrelated aspects in family living such as nutrition and food preparation, health and sanitation, home management, clothing, family life and child development and home industry. Population education/family planning is integrated in these aspects.

The population education concepts which are integrated in home economics extension subject matter are as follows:

Food and Nutrition

1) Rapid population growth affects food production and consumption which may lead to lack of food supply.

2) Strong relationships exist between poor nutrition and health and the quality of human population.

Home Management

1) Other things being equal, the utilization and management of the family's resources will be less complicated if the family is small.

2) The amount of space in the house is affected by the number of family members, their life style and perception of personal space.

Clothing

1) The size of the family affects family needs for clothing.

2) Clothing storage facilities are affected by increase in family members.

Family Life and Child Development

1) Social customs and values influence family size.

2) Family size affects the interrelationship among family members.

3) The ability to satisfy the basic needs of the individual is influenced by the size of the family and the competence of the parents.

Home Industry

1) High dependency ratio among big families is reduced through productive activities in home industries.

2) Increased family income has positive effect on family values which may include higher aspirations for the education of children.

Labour

ILO produced an interesting cartoonized booklet which is based on an animated cartoon film produced by Toonder Studios of the Netherlands. Quoted below is part of the text of that booklet.

> Some time ago, people began to see that the world faced a problem ...
>
> The Population Explosion!
>
> It's a very serious problem, especially for the poorer countries, where the population often grows by as much as 3 per cent or more a year, which means the number of people doubles about every generation. Why is the number of people growing so rapidly?
>
> Because human beings live longer, while the number of babies goes on increasing. In fact, with more births and more old people, the world's population grows by more than 200,000 everyday!
>
> Now we face the problem of finding work ...
> ... for these people.
>
> If families are to have proper food, clothing and shelter, and meet their other needs ...
> ... there must be enough productive work to go round.
>
> But 300 million more people will be looking for work over the next ten years.

> And for many of these 300 million, there will be no productive work ... perhaps no work at all.
>
> The problem is getting bigger all the time.
>
> One way to deal with it is to plan for smaller families.

Functional Literacy

The Thai Khit-pen concept is a unique approach to integrating family life planning to functional literacy programme. Khit-pen literally means to think, to be or to be able to think. The man behind Khit-pen, Dr. Kowit Varapipatana, thinks that a man who has mastered the process of Khit-pen will be able to approach problems in his daily life systematically. He will be able to examine the causes of his problems, gather the widest range of information on possible courses of action and weigh the merits of each option, based on his own values, his own capabilities, his personal situation, and the degree of feasibility of each solution. In this programme, the learners are not given a textbook. Instead, they receive a card each session, and these cards gradually mount up to form a kind of text. Each card has a picture for discussion on one side and short text on the other with spaces for writing practice. Each card focuses on a problem area related to methods of rice farming, basic health and maternity information, marketing, etc. Family planning and population information are integrated in these topics. One sample lesson is quoted below:

Rationale

> Normally, families with low income have many problems to deal with and one of the more serious problems is the cost of living. If they were also to have many children their already serious problems would even get worse and would result in the deterioration of the family health both physically and mentally.

Objectives

> To encourage the learners to consider the advantages and disadvantages of having children under each individual's own circumstances.

Topics to be discussed

> Do you agree with the saying that, "A family with many children will be poor?" Why?
>
> Considering your own standard of living do you think you should have a big or a small family, please explain in detail?

The mother with frequent pregnancy is susceptible to disease, and ages too soon. A child born from such a mother will be unhealthy. If the mother does not want to have an unhealthy child, have an unhealthy body, get sick easily, and_____, she must try not to have_____. 14/

age too soon
frequent pregnancy

Conclusion

The paper is an attempt to illustrate how different agencies and organization have integrated population education concepts in selected development programmes for out-of-school youth and adults. The coverage is far from exhaustive. It is hoped that this could be a spring-board for collating innovative approaches to integrating population education in development programmes.

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Material Production for Out-of-School Population Education

D. 26

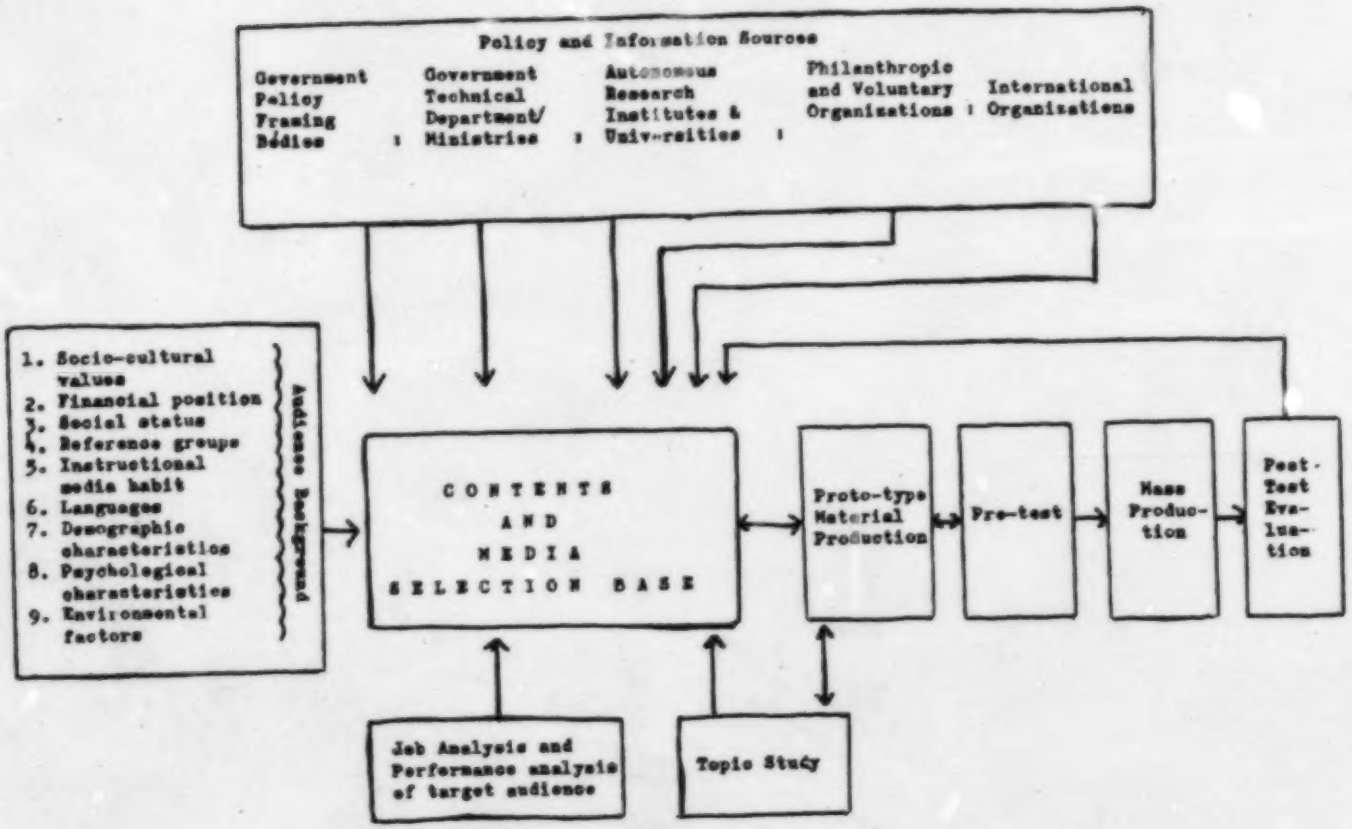
Policy makers are busy in framing new policies. The planners are trying hard to translate new policies into operational programmes and projects to help facilitate implementation of these policies. At the same time the philosophers and curriculum developers are discussing emerging human needs and rapidly changing individual, communal and societal objectives in order to synthesize the desirable elements which the future generations should study for creating a better world

14/ *Functional Literacy and Family Planning Project. Division of Adult Education, Development of Educational Techniques, Ministry of Education, Thailand.*

of tomorrow. The researchers are engaged to explore best motivational techniques, develop new concepts and appropriate teaching approaches and methodology to attract and hold the learner for a sufficiently long period to help him/her to develop desirable behavioural changes and rational decision making abilities. The general objective of all these efforts is to bring revolutions in education in order to transform it from meaningless to purposeful education. But we must not forget that real revolutions in education are brought about by textbook writers and instructional material developers who understand the implications of policy decisions, meanings of philosophical ideas, important technical research findings, appropriate instructional techniques, and translate them into instructional materials for the consumption of classroom teachers, change agents, and the general masses keeping in view the level of understanding of the receptive target audience.

The crucial roles of curriculum and instructional materials developers are generally recognized. Attempts have been made in out-of-school population education programmes to develop a broad and highly flexible framework from which the relevant contents and concepts are drawn for the production of instructional materials to meet the learning needs of diversified audience. The material production attempts very greatly from country to country so far as the production mechanism is concerned. Quite often subject specialists, teachers, instructors, and even extension agents are asked to write instructional materials; and an artist or photographer is made to illustrate them. Some of these people follow certain preparatory steps such as consulting the concerned subject specialists, visiting project areas, reviewing relevant literature etc., but most of the time the development and production of the material is based upon the intuition, subjective opinions, and experiences of the writers who usually write the material while sitting in their offices, or artists who draw sketches while sitting in their studios, and so on. Sometimes the material so produced is also pre-tested. The question to be considered here is as to how often are these procedures scientifically or even seriously planned as an integral part of the material development programme. It has generally been observed that a systematic procedure is not frequently followed, and it naturally results in the breakdown of communication between the writer and the intended audience and thus often creates confusion and misunderstanding among the people. The situation in regard to instructional material production becomes complicated and particularly deficient in out-of-school population education where the materials have not only to be prepared in multiple languages but also on a multidisciplinary basis as an integral part of already established disciplines. To ensure effective communication and validity of the instructional materials for out-of-school population education programme, it would be advisable to follow a systematic and scientific method. An attempt has, therefore, been made in the following pages to illustrate and briefly describe an instructional material production model to highlight the steps of the systematic procedure. It may however, be mentioned that the explanation will cover only professional procedure and not that of organizational aspects except the composition of material production team.

(Material Production Model) for Out-of-School Population Education



I. Policy and Information Sources

There are varied and diversified policy and information sources for out-of-school population education. Among all these sources following play the major role in diffusing and permeating the policy directives and the relevant technical informations:

a) National Planning Bodies such as Planning Commissions, Planning Division, and Manpower Planning Centres.

b) Government Technical Ministries/Departments such as Education, Agriculture, Health and Family Planning, Labour, Social Welfare, Information and Industry.

c) Autonomous Research Institutes, Experiment Stations and Universities.

d) International Organizations such as Unesco, ESCAP, FAO, ILO, WHO and UNICEF.

e) Voluntary Organizations both National and International.

f) Philanthropic Organizations.

II. Audience Background

The instructional material is considered suitable if it is built around the learner's every day vocabulary and his familiar activities and concerns, illustrated with drawings he can recognize and relate to his every day living. Since out-of-school population education programmes have heterogeneous audience such as farmers, housewives, out-of-school youth, labourers in industry, literacy teachers, extension agents in agriculture, and home economics, health workers, social welfare workers, family planning workers, bankers and so on, we should therefore, try to find out what is their background with special reference to level of understanding, languages or dialects, age, financial position, reference group, religious affiliations, social customs, norms, sanctions and punishments, taboos, personal beliefs and attitude, media habits, and the environmental conditions under which they live specially climate, housing, educational facilities, communications, working conditions, food habit, types of employment, etc. before attempting to develop and produce any instructional materials to meet their learning needs.

III. Job Analysis and Performance-Analysis

The objective of population education on one hand is to develop awareness, interest and rational decision making abilities among the masses about population related activities and on the other hand to help them improve their level of living by increasing per capita productivity. To accomplish the objective we need to produce the

material which should help them understand the relationship between socio-economic development and population growth. This could be achieved better if a job analysis is conducted to find out the type of skills required to best perform some specific jobs. The efforts should also be made to discover the skills and abilities possessed by the workers at a specific point in time and then identify the gaps between what is and what ought to be skills to perform the job with full efficiency. Such an analysis of skills should cover both manual and mental skills. The identified gaps between the required and the possessed abilities to perform specific jobs should thus form as one of the components around which the materials be produced to satisfy learner's integrated learning needs.

IV. Topic Study

In population education, the instructional materials will have to be produced on a number of interdisciplinary topics depending upon the needs of the target audience. The diversity of audience and the disciplines demands a thorough study of each topic on which the material will have to be developed in order to ensure the validity and reliability of the message. To accomplish the objective, the following procedures can be adopted for the topic study:

- interviews, correspondence and discussions with topic specialists;
- study of documents (reports, plans, projects, books on the topic, media, including those produced in other countries and other programmes, films, recorded broadcasts, and any material which will provide useful information and knowledge);
- field study (visits to projects, for example, factories, firms, farms, etc., where activities relevant to the topic are going on and can be inspected);
- 'opinion study'; - by interview; - by discussion groups. 1/

Opinion study is a vital element that is seldom included in the material production process. Its purpose is to determine what the target audience do, know, think and believe about the topic.

The steps listed above do not necessarily have to be undertaken in the same order but may overlap or interlock depending upon the availability of time, resources and local situation.

1/ *"Production of Media for Informal Adult Education, The Need for Action Research", a paper by John Bowers, Adviser, Agricultural Extension Centre, University of Readings, Reading, Berks, U.K., 1974. 29 p.*

V. Prototype Material Production

Information received from various policy and information sources, audience background, job analysis and performance analysis, and the topic study will form a general framework or base from which the contents will be selected for the development of prototype material. The script writer will draft the script on the desired topic and show it to the topic/subject specialist, and the artist for their approval of the technical contents and the suitability of the illustrations. If the draft is approved by the subject specialist and the artist, material will be prepared for pre-test with the sample target audience.

VI. Pre-Testing

The prototype material must be pre-tested with a representative sample of audience before it is produced for general use. The pre-test is generally conducted to judge the accuracy and validity of the subject matter, acceptance of colour, layout and art work etc., and examining the reliability, objectivity, and validity of the testing instruments. But the ultimate objective of the pre-test is to provide feedback on how effectively the material produced for different media is being understood by the target audience, and detect or discover faults, defects etc. in the draft materials which could be remedied to enhance the communicability and acceptability of the material. Depending upon the nature of media, different procendures are followed for pre-testing. In case of written material, the pre-testing is done in the following distinct ways:

1. Simple Reading: Each member of the sample audience is asked to read the text aloud which often indicates words, and/or sentences which are not easily understood by the reader. The person conducting the test marks those words and sentences which were difficult for the respondent to read.

2. Reading with Comprehension: The members of the sample audience are given the text and are requested to return as soon as they finish reading. They are then given a structured test, the result of which indicates the degree to which the participants had understood the text.

3. Reading Followed by Discussion: Under this procedure the sample audience are asked to read the text and then discuss the topic in a joint-meeting. This discussion can be recorded preferably on a tape to examine the extent to which the subject matter has been understood and what deficiencies, if any, still exist in the text.

All these three methods provide meaningful feedback and should thus be applied in the pre-test phase of the same text.

Visual Perception Test

The written text is sometimes supplemented with visuals such as diagram, still pictures and so on to clarify the written concepts. But the interpretation of visuals seems to have some association with the socio-cultural and educational background of the learners. It would, therefore, be appropriate to conduct visual perception test and make sure that the visual used in the instructional material communicate the same idea to the reader as the writer intended to. This is important in the Asian region firstly because some of the material developers have received training from abroad and use illustrations which are foreign to the audience and thus are likely to be misunderstood. Secondly majority of our masses both illiterate and literate are very seldom exposed to this medium and are very slow to absorb the theme of visual presentations.

To pre-test the draft prototype instructional material produced for use in radio and television media, the audio-visual tapes are played to the sample audience to obtain their reactions about the suitability of the theme, contents, speaker, method and time of the day for presentation etc. The responses of the audience are either recorded in a questionnaire/check sheet or on a tape which are reviewed later on and necessary amendments are made in the materials before the message is relayed on the air for massive consumption. In case of a film, the pre-testing is found difficult as the pre-testing can only be possible after the completion of the entire film. The changes in the contents, methods of presentations and artists in a film would, therefore, mean preparing the film from the beginning which is extremely expensive exercise.

VII. Mass Production

The prototype material developed after pre-testing is then produced in local languages at large scale and distributed to the intended audience for use in out-of-school population education programmes.

VIII. Post-Test Evaluation

Post-test evaluation has been included as one of the essential steps in material production by some experts where as the others argue that post-test is not part of the material production process. However an in-depth analysis of the production process indicates that the post-test generally does not help producers as much as the pre-test in the development of instructional materials. But if the material production is considered as an on-going activity of out-of-school population education programmes which it is, the post-test evaluation then definitely occupies the place of an essential step in material development process as it helps to identify the successes and failures of the material to communicate, and determine new learning needs of different audience. The findings of the post-test eval-

uation will therefore, help broaden the basis from which the contents and concepts be selected for developing instructional materials that will help meet the changing learning needs of our audience.

IX. Action Research

In all the foregoing stages of material production process it is assumed that there will be a built in action research component which will help to develop a feedback mechanism and thus establish two-way communication system between script writers and the intended audience. The action research staff in particular will help the production team by feeding information about the knowledge, attitudes and practices of the target audiences, pre-testing the prototype material, and finally conducting post-test evaluation. The action research personnel in order to do the job effectively should have professional qualifications in education and some knowledge and practical experience in social survey techniques, sampling procedures, interviewing, analysis and presentation of data, and vice versa.

X. Composition of Material Production Team

The material production cannot be undertaken effectively and efficiently by a single expert. This will have to be a team work. The material production team may consist of editor, general educationist who may be a social psychologist, linguist, subject specialists, field workers, artist, caligrapher, photographer, and action research personnel. The subject specialists and the field workers can be co-opted for a limited period from the relevant technical departments keeping in view the topic for material development whereas the rest of the team members will have to be full-time employees charged with the duties of material production. This may seem extravagant from monetary point of view but experience has shown that the improvement in the quality of instructional material brought about with this investment greatly out-weigh the cost. It is therefore strongly recommended that a provision for funds and personnel, if not already done, may be made for organizing such a material production team in all the out-of-school population education programmes.

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